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Emotional/behavioral adjustment and achievement outcomes associated with specific learning disability subtypes.

Donald T. Abrash
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EMOTIONAL/BEHAVIORAL ADJUSTMENT AND ACHIEVEMENT OUTCOMES ASSOCIATED WITH SPECIFIC LEARNING-DISABILITY SUBTYPES

by

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M.A. University of Windsor, 1971

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As well, please note the insertion of unnumbered pages in the prefatory material.

I dedicate this dissertation to three special women in my life. To my mother who taught me to fly, to my grandmother who encouraged me to fly higher, and to Trudy who is the wind beneath my wings.

ABSTRACT

The purpose of the present study was to determine whether learning-disabled children presenting differing patterns of cognitive abilities and deficits also differ in their emotional/behavioral functioning in school. The relationship between ability/disability structure and long-term academic achievement was also examined in this study.

Sixty-nine learning-disabled students were assigned to one of three groups on the basis of their WISC-R Verbal I.Q.-Performance I.Q. discrepancy patterns. Group 1 subjects' VIQ-PIQ discrepancy did not exceed 9 points; Group 2 subjects' PIQ exceeded VIQ by at least 12 points, while Group 3 subjects' VIQ exceeded PIQ by at least 12 points.

The data for the total sample and for the three groups were compared with respect to (a) identifiable patterns of emotional/behavioral adjustment, (b) reading progress while in full-time special education programs, and (c) frequency of successful return to the academic mainstream. The results for the total sample indicated that the majority of the learning-disabled children (a) were perceived by their teachers as poorly adjusted prior to placement in special class, (b) did not exhibit significant emotional/behavioral problems but steadily improving adjustment over three years in special class, and (c) failed to achieve

significant reading progress or to be successfully mainstreamed after three years of full-time special education.

As predicted, the different ability structure groups presented different patterns of emotional/behavioral functioning over three years. Group 1 children presented chronic adjustment difficulties, including acting-out, attentional problems and emotional immaturity in their classroom behavior. In contrast, Group 2 children exhibited essentially normal adjustment patterns while in special class programs. Group 3 children were described as distractible and emotionally immature at the time of special class placement; however, they improved dramatically in their emotional/behavioral adjustment over the three years in special class.

The results also revealed that Group 3 children achieved the most significant rates of reading progress and successful mainstreaming following full-time special education assistance. In this study 3/4 of Group 3 children, but only 1/5 of Group 2 and 1/3 of Group 1 children, eventually successfully returned to regular academic programs.

The findings reinforce the need to include (1) analyses of specific ability/disability patterns and (2) measures of emotional/behavioral adjustment, in the process of identifying and planning intervention strategies for learning-disabled children.

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CHAPTER I

INTRODUCTION

The present study is based on the assumption that a complete understanding of the learning-disabled student necessitates consideration of the emotional/behavioural functioning of the child as well as his/her central processing problems. Maladaptive patterns of behavior repeatedly emerge as major concerns that teachers express about their learning-disabled students. This has been observed in samples of both preschool (Esterly & Griffin, 1987) and elementary school age learning-disabled children (Lewis, 1983; Licht, 1983).

The most common concerns of preschool teachers include hyperactivity and hypoactivity, impulsivity, distractibility and poor self-esteem. School age learning-disabled children are described as deficient in task-related behaviors, attentional skills and independent functioning (Bender, 1985; McKinney & Feagans, 1984). These behavioral difficulties appear to be associated with emotional factors such as feelings of inadequacy (Murray, 1978; Waldron & Rosenblum, 1987), lack of self-esteem (Butkowsky & Willows, 1980; Epstein, Cullinan, & Rosemeir, 1983), feelings of helplessness and expectations of failure (Champion, Doughtie, Johnson, & McCreary, 1984; Dudek, Strobel, & Thomas, 1987). Many learning-disabled children also exhibit symptoms of chronic anxiety and

depression (Cohen, 1986; Goldstein, Paul, & Sanfilippo-Cohn, 1985; Porter & Rourke, 1985).

The collective results of this small but significant body of research suggest that the emotional/behavioral difficulties of learning-disabled children are readily identifiable and warrant further examination. Ideally, an understanding of the relationships among emotional/behavioral functioning, ability patterns and the academic progress of learning-disabled children will eventually unfold. In the following sections the research relevant to the focus of the present study is examined in some detail. This includes a review of earlier efforts to delineate the emotional and behavioral concomitants of learning disabilities. Particular attention is directed toward those efforts which more recently suggest that (a) learning-disabled children are heterogeneous with respect to their ability patterns and emotional/behavioral functioning, (b) particular patterns of abilities and deficits among learning-disabled children are associated with specific patterns of emotional/behavioral functioning; and (c) subtyping according to ability/deficit patterns may aid in the prediction of academic outcomes for these children.

Relevant Research

Even prior to the establishment of the diagnostic classification of "learning disability", researchers reported that a significant proportion of the reading-disabled children that they examined exhibited signs of emotional maladjustment (Ellis, 1949; Gates, 1941). Subsequent research

efforts confirmed that learning-disabled children present more severe behavior problems than both average achieving students (Bryan & McGrady, 1972; McCarthy & Paraskevopoulous, 1969) and educable mentally retarded children (Keogh, Tchir, & Windeguth-Behn, 1974). A major review of research on learning-disabled children concluded that behaviors such as attention to task and task-orientation reliably differentiate between learning-disabled and normally achieving children (Bryan, 1974). Keogh et al. (1974) found kindergarten and first grade learning-disabled children to be hyperactive, irresponsible, angry and hostile. Bryan (1974) conducted a study in which learning-disabled children were observed to be less task-oriented than their normally achieving peers even on simple and enjoyable tasks. This finding suggests that learning-disabled children's poorer task-orientation is not due entirely to negativity toward academic tasks or frustration as a result of chronic school failure.

The observation that behavioral difficulties of learning-disabled children are identifiable "before a long history of academic failure has been established" (Samuels & Tenure, 1974) invited various interpretations. Among those offered were that the poor classroom behavior could be attributed to a) "learned helplessness" (Butkowsky & Willows, 1980, b) "selective nonresponding" (Bryan, 1974) and most recently c) "temperament" (Bender, 1987; Pullis, 1985).

The results of this early research must be interpreted cautiously due to methodological limitations inherent in this work. Bryan included only five learning-disabled children while other studies reviewed by Bryan (1974) reported on samples of children not clearly identified as

learning disabled (Cobb, 1972; Meyers, Attwell, & Orpet, 1968; McKinney, Mason, Perkerson, & Clifford, 1975). This research also did not address the question of the relationship between the early identified emotional/behavioral factors and the long term academic success of their learning-disabled subjects. This was due at least in part to the preponderance of cross-sectional as opposed to longitudinal designs employed in these early research efforts. Whether more recent researchers have provided answers to the predictive relationship question cited above (ie., do emotional/behavioral difficulties exacerbate the academic difficulties of learning-disabled children) is the focus of the following section.

Research conducted during the past decade which is relevant to the focus of the present study falls into two categories. One group of studies has examined diagnostically useful behavioral characteristics of learning-disabled children. A second smaller body of research has attempted to clarify the nature of specific emotional/behavioral difficulties experienced by either the heterogeneous learning-disabled population or specific homogeneous subgroups of this population. Even fewer studies have examined the relationship between specific types of processing deficits, patterns of emotional/behavioral functioning and academic achievement of learning-disabled children.

The work of Bender (1985, 1987) and McKinney and others (McKinney & Feagens, 1984; Richey & McKinney, 1978) is typical of that which has attempted to identify reliable behavioral marker variables of learning disabilities. The McKinney group utilized classroom observations of third

and fourth grade learning-disabled and matched normal achievers. They initially identified high frequencies of distractibility, passivity and dependency in the learning-disabled group. Subsequent longitudinal research by McKinney and Feagans (1984) extended these findings to younger children. Even first grade learning-disabled children were significantly less self-directed, more off-task, and more dependent than controls. Over the three years of this study the learning disabled children were rated by their teachers as more dependent, apathetic, and distractible than non learning-disabled classmates. Despite resource teacher assistance they also fell further behind their peers in reading over the three year period.

The importance of considering behavioral characteristics in the process of understanding learning-disabled children is illustrated further in the findings of research by Bender (1985, 1987) and Epstein et al. (1983). Utilizing behavioral checklists and classroom observation, Bender observed that learning-disabled children exhibit more passive off-task behavior than normal and low achieving non learning-disabled peers.

It appears that some degree of deficient task-orientation characterizes learning-disabled students at various grade levels. For example, Epstein et al. (1983) readily differentiated learning-disabled from normal achieving adolescent boys through factor analysis of behavior problem checklist data. Among the problems characterizing the learning-disabled group were overactivity, irresponsibility, anxiety and social problems. In a second study Epstein (1985) concluded that younger

learning-disabled boys experience pervasive attentional problems which develop into conduct problems at adolescence. This developmental difference was noted by Epstein; however, the cross-sectional design of this study precludes confirmation of a developmental behavioral shift for these children.

As others (McKinney & Feagans, 1983) have noted, research on the adaptive behaviors of learning-disabled children still lacks a developmental perspective. Research focusing on younger learning-disabled children, however, supports a further hypothesis of McKinney and Feagans (1983) that "Deficiencies in task-oriented behavior and independent functioning may be essential characteristics of the handicap itself" (p.366). This hypothesis is based on the premise that such deficits in behavioral functioning exist prior to extended school failure experiences for this group of children. The present study will address this issue, which Cohen (1986) recently commented on from his clinical work with learning-disabled children:

> ...there is a complex interaction between the cognitive deficit itself, the actual frustration and failure it engenders, conscious and unconscious interpretations of these events, self-experiences and emotionally related repercussions. This set of events and responses are often mutually reinforcing and become interwoven into the character and evolving identity of the person. (p.298)

The studies reviewed to this point provide some insight into the behavioral characteristics of learning-disabled children. Other studies have attempted to identify the affective factors underlying the specific

behaviors which differentiate learning-disabled children from their normally achieving peers. The studies of this type which have been conducted employed diverse sample selection methods, instruments, designs and methodologies. Nevertheless, some tentative conclusions will be offered based on a synthesis of the relevant findings of this research.

A study by Murray (1978) is informative in that a relatively large sample of learning disabled children were compared with matched controls on a variety of both behavioral and affective measures. Murray's (1978) learning-disabled sample exhibited significantly lower self-worth, greater anxiety and defensiveness as well as classroom behavior problems than normal achieving classmates. The learning-disabled subjects' major feelings of inadequacy pertained to their intellectual and school status.

Butkowsky and Willows (1980) further clarified the nature of poor task-orientation of learning-disabled children. They gave ten year old poor, average, and superior readers tasks on which their success or failure was predetermined by the manipulation of the experimenters. Poor readers consistently exhibited less persistence than good readers on all tasks. This was due to initially lower expectations of success on the part of poorer readers. They also were observed to attribute their failures to a lack of ability and their successes to external causes.The learning-disabled children studied by both Murray (1978) and Butkowsky and Willows (1980) were well beyond school entry (mean age = 10 years). Consequently, it cannot be determined if these children lacked self-esteem and self-confidence prior to or only following some period of school failure.

Evidence that broad-based emotional difficulties are identifiable among even preschoolers may be obtained from a recent investigation by Dudek, Stroebel and Thomas (1987). In this study the responses of the highest and lowest achievers in a first grade class to the Early School Personality Questionnaire were compared. The children had completed the questionnaire while still in kindergarten. The lowest achievers were found to be significantly more anxious, insecure, serious and maladaptively sensitive. Although not formally diagnosed as learning-disabled, the lowest achievers presented ability patterns remarkably similar to that of learning-disabled children. That is, despite average intelligence they exhibited conceptual and perceptual-motor deficits and progressively poorer achievement relative to their classmates over the four years of this study.

Evidence regarding the global nature of the self-esteem problems of learning-disabled children has been provided recently by Dekrey and Ehly (1981) and Cohen (1986). Dekrey and Ehly (1981) employed a clinically reliable, standardized parent rating scale, the Personality Inventory for Children (PIC: Wirt, Lachar, Klinedinst, & Seat, 1977). Significantly higher clinical Depression and Anxiety scale scores were evident in the profiles of learning-disabled children relative to those of normally achieving youngsters. Recently, in a clinical study of a small group of school-age learning-disabled clients, Cohen (1986) also reported a high incidence of "chronic low level depression". This depression, Cohen concluded, resulted from feelings of cognitive inability and helplessness. Cohen's clients viewed not only academic but also social

challenges as threatening situations in which they would fail and be humiliated.

Finally, Sobol, Earn, Bennett, and Humphries (1983) observed that even younger learning-disabled children possess poor social self-images and low expectations of social success. In Sobol et al's sample of Canadian students, the learning-disabled children were reported to possess the view that luck is the primary means for influencing social events. Sobol et al. (1983) observed that this attributional style is independent of the child's social standing in the peer group. Sobol proposed that a "general immaturity of social-cognitive development", a function of the nature of the learning disability itself, accounts for learning-disabled children's poor social self-concepts.

The concordance noted in the results of the studies reviewed to this point is noteworthy since the methods employed varied from clinical inference to self-reports to parent or teacher rating scales. This body of research contributes to an appreciation of the prevalence and severity of maladaptive emotional/behavioral functioning within the school-age learning-disabled population. However, as Porter and Rourke (1985) have noted, this research suffers from a major methodological shortcoming. Specifically, these investigations consistently failed to address the important issue of heterogeneity within the learning-disabled population. Important within group differences regarding both ability patterns and emotional/behavioral functioning may have been obscured by treating learning-disabled children as a homogeneous "unitary" group.

Studies which have identified meaningful subtypes of learning-

disabled children, differing from one another in terms of emotional and behavioral functioning are reviewed in the following section.

Subtypes of Learning-Disabled Children

In order to obtain a comprehensive picture of the heterogeneity in social and emotional functioning among learning-disabled children Porter and Rourke (1985) employed the PIC. The parents of 100 learning-disabled children between 8 and 15 years of age completed this instrument. The mean PIC profile for the total sample was not suggestive of emotional difficulties. However, subsequent subtypal analyses (Q-type factor analyses) were conducted by these researchers. Four subtypes of learning-disabled children, differing in social and emotional functioning, emerged from this analysis.

Forty-four percent of the classified subjects identified by this procedure were characterized by adequate emotional functioning. Approximately 25% of the sample were experiencing internalized emotional difficulties, while another 17% were described as overactive, distractible with low frustration tolerance. Porter and Rourke's (1985) research represented a significant advancement in this area of enquiry by elucidating the heterogeneity of social and emotional adjustment within the learning-disabled population.

Durrant (1988) further extended this line of enquiry by examining self-concept and success-failure attributions of behavioral subtypes of learning-disabled children. The results of this investigation indicated that learning-disabled and non-learning-disabled children do not differ

in their explanations of their academic or social successes and failures. Durrant (1988) concluded that the presence of a learning disability does not by itself affect "a child's tendency to view his or her experiences in an overly negative way", or determine the child's self-concept. Most important to the "heterogeneity of learning-disabled children" issue are Durrant's findings pertaining to different subgroups of learning-disabled children.

Specifically, Durrant (1988) found that those learning-disabled children exhibiting concomitant symptoms of anxiety disorders (both internalizing and externalizing symptoms) ascribe success to uncontrollable causes (i.e. luck) more so than do learning-disabled children with behavior disorders but not anxiety symptoms. Further, learning-disabled children who externalize their behavior also blame others for their academic failures more so than do (1) non-behavior disordered learning-disabled children or (2) learning-disabled children displaying internalizing symptoms.

Durrant noted, in interpreting these findings, that her subjects were drawn from a clinic population. Caution then must be taken in generalizing the results to learning-disabled children that have not received treatment for behavior disorders. Secondly, no effort was made to match groups according to type of ability-disability profile. As Durrant (1988) pointed out, "various types of central processing deficits may differentially affect the ways in which children perceive situations and their own behavior" (p.135). The relationship of learning-disability ability subtype to attributional patterns and self-concept has yet to be

investigated. However, a related series of studies have examined the relationships between personality subtypes and specific patterns of abilities/disabilities for learning-disabled children (Rourke & Fisk, 1988; Strang & Rourke, 1985).

An informative study by Strang and Rourke (1985) was based on a comparison of the PIC profiles of two ability pattern subtypes of learning-disabled children. One group exhibited symptoms of psycho-linguistic impairment while the other group was described as showing a "nonverbal learning disability" pattern of deficits. The former group exhibited essentially normal PIC profiles. However, the latter group of learning-disabled children presented symptoms of "internalized psychopathology" very similar to Porter and Rourke's (1985) "emotionally disturbed" subtype. In addition to significantly elevated PIC Anxiety, Withdrawal, and Depression scale profiles, clinical observations of this subtype revealed problems of dependency and immaturity in these children.

The Rourke group next illustrated the relationships between ability and emotional/behavioral patterns of functioning using a WISC Verbal I.Q.-Performance I.Q. discrepancy index to subtype learning-disabled children. In this study Fisk, Fuerst, and Rourke (1988) identified three ability subgroups using the aforementioned index. One group (referred to as HP-LV) exhibited WISC PIQ exceeding VIQ by at least 10 points. A second group (HV-LP) achieved VIQ scores exceeding PIQ scores by at least 10 points while a third group had essentially equal VIQ and PIQ scores. Cluster analysis of PIC data for these subgroups revealed that the HV-LP children were allocated to the emotionally disturbed (40%) or hyperactive

(63%) clusters. In comparison, the HP-LV group presented essentially normal or "mild anxiety'depressive" symptoms, according to parent responses to the PIC. It appears that children exhibiting a pattern of nonverbal learning disabilities are especially at risk for significant concomitant emotional disturbance.

The consistency of the findings of the Porter and Rourke (1985), Strang and Rourke (1985), and Fisk, Fuerst, and Rourke (1988) studies has two significant implications. First, they illustrate the importance of recognizing the heterogeneity of the learning-disabled population, both in terms of ability structure and emotional functioning. Secondly, they provide a framework for further study of the relationship between specific ability patterns and affective/behavioral characteristics in groups of learning-disabled children. The present study will utilize this structural framework with school-identified learning-disabled students exhibiting specific ability/disability profiles.

A second purpose of the present study is to examine more long-term relationships between early identifiable ability patterns of learning-disabled children and their academic success. Previous research of this type is rare and the findings less definitive than those of the studies reviewed in the previous sections. Research which has attempted to explore the prediction of achievement issue within the context of ability patterns and emotional/behavioral functioning of learning-disabled children is reviewed in the following section.

Emotional and Behavioral Functioning and Achievement of LD Children

Two studies (Battle & Blowers, 1982; Ribner, 1978) are most frequently cited as representative of those which have attempted to document improvement in emotional/behavioral functioning following special education assistance for learning-disabled children. In one two-year follow-up study, Battle and Blowers (1982) noted significant gains in self-esteem and perception of ability among children receiving special education assistance. Separate analyses for the learning-disabled and educable mentally retarded subgroups were not conducted. Ribner (1978) reported better self-concepts for those "MBD" children receiving special education class assistance than regular class MBD children. When compared with a group of normally achieving children, both groups of learning-disabled children were significantly lower in self-concept of school ability. However, only the non-placed MBD students possessed significantly poorer general competency self-images than normal achievers. Perhaps the special education assistance has more positive effects on the learning-disabled child's sense of personal efficacy than their feelings of academic competency.

Another question generated by the research cited to this point is whether specific emotional/behavioral characteristics are predictive of learning-disabled students' school success. Only two published studies have directly compared the emotional/behavioral functioning of learning-disabled children varying in success in special education programs. The results of these early efforts are not conclusive. One study (Murray, 1978) revealed lower self-concepts, greater anxiety, and

classroom behavior problems in those students who were not successful in remedial education programs. More recently, Rogers and Saklofske (1987) observed that affective variables were only moderately effective predictors of success in special education programs. It is important to note that in both of the studies the students had received part-time remedial assistance for less than one year. Also, in the latter study the affective measures were not administered until after the students had received remedial assistance.

Conclusions regarding the long-term predictive relationships among the variables examined in the above studies must await further investigation. Certainly, issues such as causality in the relationship between affective/behavioral characteristics and remedial success remain unresolved at this time. A better understanding of the causal or interactive relationship between emotional/behavioral factors and academic progress within special education and mainstream classrooms may result from more comprehensive longitudinal investigations.

In the only published study of this type, McKinney and Speece (1986) followed 47 six and seven year old learning-disabled students for three years. They identified, using teacher rating scales, various behavioral subtypes of learning-disabled children. Those exhibiting either an attentional deficit or conduct problems made fewer gains in reading over the three years of the study than did a normal behavior group. McKinney and Speece (1986) concluded that learning-disabled kids with low independence and poor task-orientation are at greater risk for academic failure. They noted, however, that their subjects had received only brief

resource withdrawal assistance. As well, they utilized a single criterion measure of academic success (PIAT reading score). Investigation of the behavior - achievement relationship using broader measures of the dependent variable (teacher assigned grades in special education classes; successful mainstreaming, etc.) is needed. Studies of this type, employing as subjects children receiving more intensive assistance in full-time programs would be informative.

Summary

The findings of the present review support the observations of others (Anderson, Cronin, & Miller, 1985; McKinney & Feagans, 1983; Rogers & Saklofske, 1985) that emotional/behavioral difficulties characterize the functioning of some learning-disabled children. The published research suggests that learning-disabled children exhibit difficulties in task-orientation, attentional skills and self-reliant/independent functioning in school. The consensus among researchers is that these behavioral patterns reflect feelings of insecurity, anxiety and inadequacy regarding mastery situations. Contrary to traditionally accepted interpretations, this review reports evidence that these affective/behavioral disorders precede school failure experiences for at least some learning-disabled children. Both self-report and parent or teacher rating procedures reveal the presence of internalizing affective disorders (ie: anxiety and depression) within even pre-school age learning-disabled populations.

The few recent efforts to identify specific subtypes within the

learning-disabled population indicate that it is heterogeneous, both in terms of ability-disability patterns and emotional/behavioral functioning. Further investigations of subtype specific emotional/behavioral adjustment problems within this group of children appears warranted. This review also revealed that few longitudinal studies in this line of inquiry have been conducted to date. Equally few studies have examined the relationship between early documented emotional/behavioral characteristics and the achievement outcomes for learning-disabled children.

Especially encouraging are the results of research such as that conducted by Fisk, Fuerst, and Rourke (1988) which suggests that specific patterns of abilities and deficits are associated with identifiable patterns of emotional and behavioral functioning for learning-disabled children. Whether such patterns persist over time for specific subtypes has not been extensively studied. Also, the relationship of such patterns to academic outcomes for learning-disabled children warrants further investigation.

In the following section the present study is described in some detail. A description of the rationale for the study, the hypotheses to be tested, and the methodology/design of the study follows.

The Present Study

The purpose of the present study was to (1) examine the emotional/behavioral functioning of learning-disabled students presenting differing patterns of abilities and deficits and (2) to determine if

specific ability/disability patterns are related to differing degrees of academic achievement for learning-disabled students.

This study employed an index such as that used in the research of Fisk, Fuerst, and Rourke (1988) to identify subgroups of learning-disabled students according to their different ability/disability patterns. The emotional/behavioral functioning of subgroup members at the time of their referral for assessment and following placement in a special education program was then examined. It was expected, based on the research reviewed, that differing ability structure subtypes would also exhibit differentiating patterns of emotional/behavioral functioning during their early school years. While essentially replicating the approach of Rourke and associates, this study may contribute to existing knowledge regarding the adaptive functioning of learning-disability subtypes, as outlined below.

The present study employed teacher, as opposed to parent, ratings of the emotional/behavioral functioning of the learning-disabled children. As teachers may attend to different concerns than parents, they may attribute different types of emotional/behavioral patterns to these children. Nevertheless, characteristics such as hyperactivity and distractibility as well as global emotional disturbance, commonly reported by parents of these children, also may be of major concern to teachers.

A second goal of this study was to ascertain whether specific ability/disability patterns are useful predictors of mainstreaming outcomes for learning disabled children. Mainstreaming refers to the

successful return of a student from self-contained special education classrooms to the regular classroom programs. Very few studies have examined predictors of successful mainstreaming (Schneider & Byrne, 1984). Many have employed single measures of achievement gain, such as a pre and post reading test score, as the criterion of academic success.

In the few predictive studies reviewed, researchers typically defined school success as improvement on specific standardized achievement tests. A more appropriate measure of academic success for the learning-disabled child may be obtained from teacher reports of his/her grades in core subjects. It is this naturalistic measure of progress that ultimately determines the academic future of this group of students; that is, whether a student remains in special education classroom programs or is successfully reintegrated into the academic mainstream.

The validity and utility of teacher judgments of students' achievement has been verified by numerous recent empirical investigations (Gresham, Reschly & Carey, 1987; Hoge, 1983; Hopkins, George & Williams, 1985). Hopkins et al. (1985) observed a significantly high degree of correspondence between CTBS achievement test scores and teacher judgments of 4th and 5th grade students' achievement in language arts, reading and mathematics. In one study learning disability and regular class teachers were asked to rate the importance of criteria which may be applicable to the mainstreaming decision making process (Wilkes, et al. 1979). Scores on standardized tests were rated only 33rd on a list of 41 criteria in terms of perceived importance when deciding to mainstream a learning-disabled child. In contrast, the most important criteria cited

by teachers included Reading and Math skills as well as appropriate classroom behavior.

Gresham et al. (1987) found teacher ratings of both learning-disabled and non-learning-disabled students' achievement correlated with PIAT achievement scores at a level typically observed between standardized achievement tests. The accuracy of teachers' judgments of students' achievement relative to grade-level expectations held for math, reading and overall academic achievement. On the basis of the findings of research to date, Gresham et al. (1987) concluded that teachers are reliable "tests" of student achievement.

Other methodological problems characterize the predictive studies reviewed to this point. Specifically, few studies employed longitudinal designs and few of these exceeded a two-year follow-up period. Most have attempted to identify predictors of academic success for learning-disabled students receiving only part-time remedial assistance. Those directly studying mainstreaming have not addressed the issue of heterogeneity among their learning-disabled subjects. However, as Rourke (1985, 1988) has noted, "investigations that fail to recognize the value of identifying homogeneous subtypes in this population will produce, at the very best, only trivial results."

The present study examined the classroom performance of specific subtypes of learning-disabled children placed in full-time learning disability classrooms. It was expected that the follow-up period in the present study (5-7 years) would enhance knowledge of longitudinal outcomes associated with the variables of interest. This approach was

designed to overcome some of the methodological limitations hindering meaningful interpretation of the results of previous studies.

Predictions

In view of the findings of previous research that was reviewed, the following predictions were suggested:

(1) For the total sample, it was expected that the majority of the children would be rated by their teachers as relatively well adjusted behaviorally and emotionally (Porter & Rourke, 1985). On the basis of research by Bender (1985) and others (Bryan, 1974; Esterly & Griffin, 1987; McKinney & Feagans, 1984), it was expected that teachers would report high frequencies of attentional/distractibility and dependency problems for the total learning-disabled sample.

(2) It was hypothesized that the different ability structure subtypes would present different emotional/behavioral concerns to teachers. Subtyping research typically has employed parent, as opposed to teacher, rating measures. Consequently, predictions regarding the specific behaviors of concern to teachers for different subtypes of learning-disabled children were difficult to formulate. Nevertheless, on the basis of research conducted by Fisk, Fuerst, and Rourke (1988) and Strang and Rourke (1985), it was proposed that (a) those learning-disabled students exhibiting a WISC-R pattern of high verbal abilities with significantly lower nonverbal abilities (HV-LP) would receive higher ratings on distractibility and overall emotional/behavioral disturbance than the HP-LV and PIQ = VIQ subgroups

at the time of initial special class placement; (b) students exhibiting a WISC-R pattern of low verbal and significantly higher nonverbal abilities (HP-LV) would present the most "normal" behavioral profiles of the three learning-disabled subtypes; and (c) during early adolescence the HV-LP group would receive higher ratings on measures of "internalized psychopathology" than the other two groups.

(3) Because of their more intact verbal-linguistic abilities and facility with reading and spelling (Rourke, 1985), but in spite of their predicted higher incidence of behavioral problems, the members of the HV-LP group were expected to (a) achieve the highest level of reading comprehension ability of the three subgroups over the period examined in this study; and (b) integrate most successfully back into the regular academic stream.

CHAPTER II

METHOD

Subjects

The subjects in this study were 69 learning-disabled children from an urban/rural school system in Southwestern Ontario. All subjects had been identified as learning-disabled by the school system's Identification, Placement and Review Committee (I.P.R.C.) according to the defining criteria specified by Ontario legislation (Bill 82). A detailed outline of these criteria is presented in Appendix A.

The 69 subjects were drawn from a pool of 90 children identified by the Board as candidates for full-time special education class. The original 90 learning-disabled students represents approximately 5% of the student population from which the children were selected for full-time special class. An additional 5-10% of the student population, not included in this study, were identifed as learning-disabled but received less intensive remedial assistance. Consequently, the subjects included in this study represent a specific subset of the overall number of learning-disabled children in the system; specifically, those deemed to be in need of the most intensive assistance and placed in full-time learning disability classes during the period 1980-1983.

The final sample size of 69 subjects was a result of the omission of 21 children from the original pool. Seven children offered full-time special education class were not placed due to parental refusal of this option. Five children were excluded from the analyses since they left the school system after one or two years in the program. One student did not meet the study criterion that all subjects possess a Full Scale IQ score of 85 or above on the WISC-R (Wechsler, 1974). An additional 8 children were omitted from the sample due to failure to fit the WISC-R profile criteria discussed below.

Subjects were assigned, for the purpose of comparison, to subgroups on the basis of their WISC-R profiles. Each group was composed of 23 learning-disabled children. Specific group assignment was based on each student's Verbal IQ - Performance IQ score discrepancy, in a manner similar to that used in previous ability subtyping research (e.g., Fisk, Fuerst & Rourke, 1988).

In order to maximize between group ability pattern differences, a higher cut-off was employed than that used in previous studies. These studies employed a minimum 10 point VIQ - PIQ discrepancy to assign subjects to ability subtypes. However, Kaufman (1979) has indicated that the size of VIQ - PIQ differences required for statistical significance is 12 points ($p<.05$). Consequently, a High Verbal group (VIQ > PIQ by at least 12 scaled score points), a Low Verbal group (PIQ > VIQ) by at least 12 scaled score points) and a Verbal IQ = Performance IQ group (VIQ-PIQ discrepancy < 9 scaled score points) were studied. The reasonably conservative criterion of 9 points was employed to define the V = P group

and to differentiate this group from those exhibiting reliable VIQ - PIQ differences. As a result of this procedure a significant reduction in the sample size did not occur. Only 8 children were omitted from the overall sample due to VIQ - PIQ differences of 10 or 11 points; these were equally distributed between the V>P and P>V pattern groups.

Summary statistics for the study sample of 69 children are presented in Table 1.

Measures

Cognitive Ability and Achievement Measures

The verbal, performance and full scale IQ data for each child, obtained from each student's permanent school record file were based on a single administration of the Weschler Intelligence Scale for Children-Revised (Weschler, 1974) prior to each child's placement in special education class.

The measure of reading achievement employed in this study was the Gates-MacGinitie Reading Comprehension Test (MacGinitie, 1979). Teachers administer this test each year to all students in their special classes. This test has popular acceptance in research and educational settings.

The authors of this test report extensive Canadian norm validation procedures and K-R 20 reliability coefficient ranging from .85 to .92 for the Comprehension test. This measure reports students' scores as T-scores with a mean of 50 and a standard deviation of 10 T-score units. Consequently, in this study a cutting point of T≥40 (within 1 SD of the mean) was employed to differentiate average range from below average

TABLE 1

SUMMARY STATISTICS FOR THE STUDY SAMPLE

	Age at Placement	FSIQ	VIQ	PIQ	V-PIQ Discrepancy
Group 1 (V=P) (n = 23)					
Mean	7.8	94.3	95.4	93.8	1.6
Range	6-9	85-111	84-112	84-111	0-8
Group 2 (HP-LV) (n = 23)					
Mean	7.9	98.8	89.1	110.9	21.8
Range	7-9	86-113	77-104	93-130	12-33
Group 3 (HV-LP) (n = 23)					
Mean	7.4	99.9	108.6	89.4	19.2
Range	6-9	85-120	90-128	74-108	12-28
TOTAL SAMPLE (n = 69)					
Mean	7.7	97.6	97.7	98.0	.3
Range	6-9	85-120	84-128	74-130	0-33

readers.

Mainstreaming Success

A policy of the school board was to gradually integrate learning disability class students into the mainstream classroom setting. The objective was to return each student to full-time regular class programs within two years of their special class placement. Consequently, each student may receive instruction in a regular classroom setting for one or two academic subjects. If successful in these subjects, further program modifications were implemented involving additional regular class instruction up to full-time integration.

In this study the successfully mainstreamed (SM) group was comprised of only those students who achieved full-time integration into the mainstream and continued to achieve passing grades in English, Mathematics and Science. These subjects were selected as criteria of successful mainstreaming as they comprise the core curriculum at each grade level and significantly influence promotion/retention decisions for students.

All other students were designated as unsuccessfully mainstreamed (UM). They represented a group of children who were tried in regular classes but failed to achieve sufficiently during integration to warrant full-time return to the mainstream.

Measures of Emotional/Behavioral Adjustment

Referring Teacher Rating Scale

At the time of initial referral of each child for an assessment by special education personnel, the referring teacher is required to complete a Behavior Rating Scale. This is a nonstandardized instrument, designed to elicit teacher concerns regarding students' classroom behavior, personal and social adjustment. On the basis of the types of emotional/behavioral problems identified in previous research with learning-disabled children, teacher ratings along five dimensions from this scale were recorded for the present study. These included ratings of the child's Activity Level (eg: Overactive-Passive), Concentration Level, Self-confidence, Emotional Control and Peer Relationships. For each dimension teachers rate the child along a 5 point continuum. A rating of 1 indicates that the behavior is not characteristic of the child; ratings of 5 reflect commonly observed behaviors in the daily functioning of the child in school. The portion of this scale employed in the study along with an explanation of the items comprising each dimension appear in Appendix B.

Special Class Teacher Rating Scale

During the first year of special class programming and for each year that a child remains in special education, teachers complete the 50 item Walker Problem Behavior Identification Checklist (WPBIC; Walker, 1983). The WPBIC was designed to assist teachers in the identification of specific types of behavioral difficulties that interfere with successful academic performance. The fifty items and their weightings are reproduced in Appendix C. Based on the weighted item totals, raw and standard scores may be computed for five scales and a total measure of behavioral

disturbance. The five subscales of problem behavior include Acting-Out, Withdrawal, Distractibility, Disturbed Peer Relations and Immaturity.

Walker (1983) has provided a detailed description of the factorial basis of the subscales, as well as studies suggesting adequate reliability and validity for this instrument. Scale descriptions, items and factor loadings are reproduced in Appendix C. Split-half reliabilities of .98 and test-retest stability coefficients from .80 to .89 have been reported by Walker (1983). As well, the test author provides evidence for reasonable contrasted group, criterion, and factorial validity for use of this checklist with elementary school children.

The method of score interpretation for this instrument used in the present study follows that recommended by Walker in the WPBIC manual. First, raw scores were converted to T scores for all scale scores and each student's total adjustment score (see Profile Analysis Chart in Appendix C). Any score equal to or above a T score of 60 represents an area of significant behavioral problem. A Total Score of 22 or higher ($T \geq 60$) for males or 12 or higher ($T \geq 60$) for females has been recommended as an indicator of behavioral disturbance of significant proportion by Walker (1983).

Procedure

Permission to conduct this retrospective examination of the school records of each child was obtained from the Essex County Board of Education.

Specific information regarding the behavioral and academic functioning of each student between 1979 and 1988 was accessed by reviewing the Ontario Student Record file of each student in the student's present school. Additional information regarding each student's history of cognitive and affective functioning was drawn from the Special Education Department's Student Services file at the school system's central office. This file contains ongoing records of assessment and interventions with each referred student while they remain in special programs.

Design and Statistical Analyses

In order to test the hypothesized relationships between specific ability patterns, emotional functioning and mainstreaming success for learning-disabled children, subjects, matched on the basis of age, sex and Full Scale IQ were divided into three groups. Children exhibiting WISC-R VIQ > PIQ by at least 12 points were assigned to the HV-LP sub-group. Those exhibiting the opposite VIQ-PIQ pattern comprised the HP-LV subgroup. A third subgroup, exhibiting a mean VIQ=PIQ discrepancy not exceeding 8 points, also surfaced in the subject selection procedure.

Initially a one-way analysis of variance (ANOVA) was conducted to determine if there were significant differences between the groups for the selection criteria variables.

Univariate analyses were conducted next on the teacher behavior rating scale data for each group. A one-way analysis of variance was employed to identify inter-group differences in global behavioral distur-

bance. Separate ANOVAS for WPBIC scale data for three consecutive years of special education teacher ratings were also conducted. These analyses were utilized to determine if (a) the different ability pattern groups and (b) successfully and unsuccessfully mainstreamed students within each group also differed in the specific types of emotional/behavioral problems they exhibited following placement in a full-time special class program.

A one-way repeated measures analysis of variance (ANOVA) was conducted to determine if the ability subtype groups differed in reading ability over a three year period of special class intervention. Further repeated measures ANOVAS were conducted for the overall sample and ability pattern subgroups to examine differences in reading achievement related to mainstreaming success.

The Student-Newman-Keuls method of post-hoc analysis was conducted when significant F ratios were found in the ANOVAS.

Finally through the use of Chi-square analyses, frequency data were examined regarding the proportion of both the overall learning-disabled sample and each subgroup that; (a) exhibited significant behavior problems prior to placement in a full-time special class program; and (b) were ultimately successfully mainstreamed into a regular academic classroom program.

CHAPTER III

RESULTS

This study was designed to investigate the emotional/behavioral functioning, reading achievement, and mainstreaming outcomes associated with specific ability/disability patterns of learning disabilities. The retrospective design of this study facilitated analyses of the data for three levels of the subject sample. In the following section, the results of the analyses are reported for (a) the total sample, (b) three ability subtype groups, and (c) successfully and unsuccessfully mainstreamed students within each ability subtype group.

The data pertaining to the subjects' ability patterns and achievement and behavioral ratings were analyzed using the Statistical Analysis System (SAS Institute, 1982). The order of presentation of the results of the analyses is as follows: (1) summary statistics for the sample; (2) emotional/behavioral functioning; and (3) mainstreaming success and reading achievement.

Subject Summary Statistics

The group means and standard deviations for Group 1 (V=P), Group 2 (HP-LV) and Group 3 (HV-LP) for each of the selection criteria are presented in Table 2. Mean WISC-R Verbal, Performance and Full Scale IQ

profiles for each group are illustrated in Figure 1.

A one-way analysis of variance (ANOVA) was conducted to determine if there were significant group effects pertaining to these variables. No significant differences were found between groups for the variables Age of subjects (at time of placement) or Full Scale IQ ($p > .10$). Significant group effects were observed in the ANOVA results for the variables Verbal IQ and Performance IQ. Student-Newman-Keuls post-hoc comparison tests indicated that: (1) the Verbal IQ of Group 3 (i.e., HV-LP) was significantly higher than that of both Group 1 (V=P) and Group 2 (HP-LV) at the .05 level; and (2) the Performance IQ of Group 2 students was significantly higher than that of both Groups 1 and 3 ($p < .05$). The F value and probability level for each of the variables is presented in Table 2.

These results were consistent with expectations based on the criteria employed during the subject selection procedure. They also support the intention that subsequent analyses compared learning-disabled children of equivalent overall intellectual ability but significantly different ability patterns.

Emotional/Behavioral Functioning

Referring Teacher Behavior Rating Scale

This measure of behavioral adjustment consists of five subscales of emotional/behavioral functioning (i.e., Activity level, Concentration, Self-Confidence, Emotional Control, and Peer Relations).The frequency (i.e. prevalence rate) of behavioral problems reported by the teachers of

Table 2

Descriptive Statistics for Selection Variables

Variable Name		Group 1 n=23	Group 2 n=23	Group 3 n=23	F
Age at time of Placement	M	7.8	7.8	7.4	2.38
	SD	.9	.7	.9	
FIQ	M	94.3	98.8	99.6	2.42
	SD	7.8	7.2	10.9	
VIQ	M	95.4^{b}	89.1^{b}	108.6^{c}	31.28*
	SD	7.9	6.8	10.5	
PIQ	M	93.8^{b}	110.9^{c}	89.4^{b}	33.79*
	SD	8.4	9.2	10.4	

Means with different superscripts differ significantly at $p < .05$.

* $p < .001$

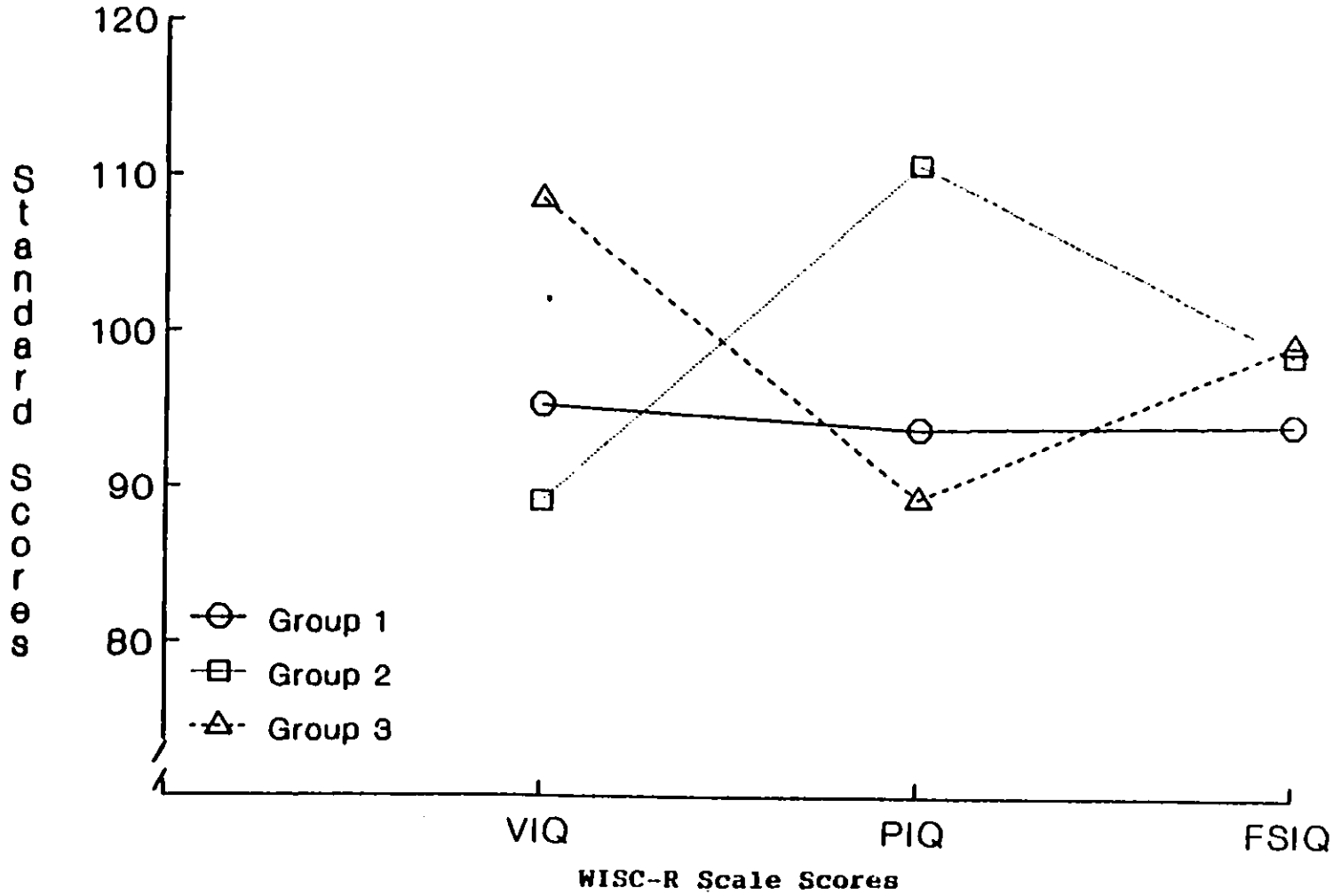

Figure 1. Mean WISC-R profiles for Groups 1, 2, and 3 learning-disabled children.

the learning-disabled children at the time of referral for an initial assessment was analyzed through a goodness of fit Chi-square procedure.

This procedure essentially involves comparing the prevalence rate of behavior problems in this sample with an expected (i.e. theoretical) prevalence rate for each dimension of emotional/behavioral adjustment. Estimation of the expected frequency level for this sample was difficult to determine since the rating scale employed in the study is a nonstandardized instrument. That is, students were rated as either exhibiting the behavior problem to a significant degree or not by their teachers. Therefore, it was necessary to estimate the expected frequency level from prevalence rate figures cited in clinical and research reports.

The reported prevalence rates for behavior problems among the overall school-age population vary widely. For example, prevalence rates of 3% to 5% for attention/distractibility and antisocial personality disorders and 9% for conduct disorders are generally accepted for school-age children (Barkley, 1981; DSM-III-R American Psychiatric Association Manual, 1987). However others have reported behavior problem rates as high as 48% for school-age samples (Grieger and Richards, 1976). Trites (1979) reported that 14% of a sample of students in Ontario exhibited symptoms of hyperactivity.

The general consensus among recent reviewers of this issue is that a prevalence rate of 20 to 25% is the most accurate empirically supported, estimate for school-age children (Trent, 1989).

Consequently, in the present analyses a conservative expected preva-

lence rate of 30% was employed in computing the Chi-square. The frequency data and results of this analysis are presented in Table 3.

The results of this analysis revealed that for a significant percentage of the overall learning-disabled sample, the referring teachers reported problems of attention/concentration, self-confidence and emotional control ($p < .001$). A pairwise comparison Chi-square analysis indicated that the ability subtype groups did not differ in the frequency of problem behaviours reported by referring teachers ($p > .05$). As illustrated in Table 3 and Figure 2, a significant percentage of the children in each of the three groups exhibited concentration problems and self-confidence problems. A significant proportion of Group 1 ($p < .001$) and Group 2 ($p < .05$) members were rated as exhibiting emotional control problems at the time of referral. Peer relationship difficulties and activity level problems were not reported by teachers as of concern for any group or for the total sample ($p > .05$).

The children comprising the study sample were referred by their teachers primarily because of academic achievement problems. However, the results indicated that, for the majority of the sample, significant emotional and behavioral problems also were of concern to their regular classroom teachers. Furthermore, as illustrated in Figure 2, a clearly identifiable trend emerged with respect to the frequency of adjustment problems reported by teachers for the three ability subtype groups.

Specifically, for each of the five dimensions of personal and social adjustment, a greater percentage of Group 1 than Group 2 or 3 members were rated as exhibiting significant problems. Even during their first

Table 3

Analysis of Frequency Data: Referring Teacher Behavior Scale

Scales (Problems)	Group 1	Group2	Group 3	Total Sample
Activity Level	43.5[a]	30.4	21.7	31.88
Concentration	95.7***	87.0***	82.6***	88.4***
Confidence	69.6***	65.2***	60.9*	65.2***
Emotional Control	73.9***	52.2*	47.8	58.0***
Peer Relations	34.8	26.1	8.7	23.2

a Percentage rated as exhibiting the problem behavior at a level of significant concern.

* $p < .05$ ** $p < .01$ *** $p < .001$

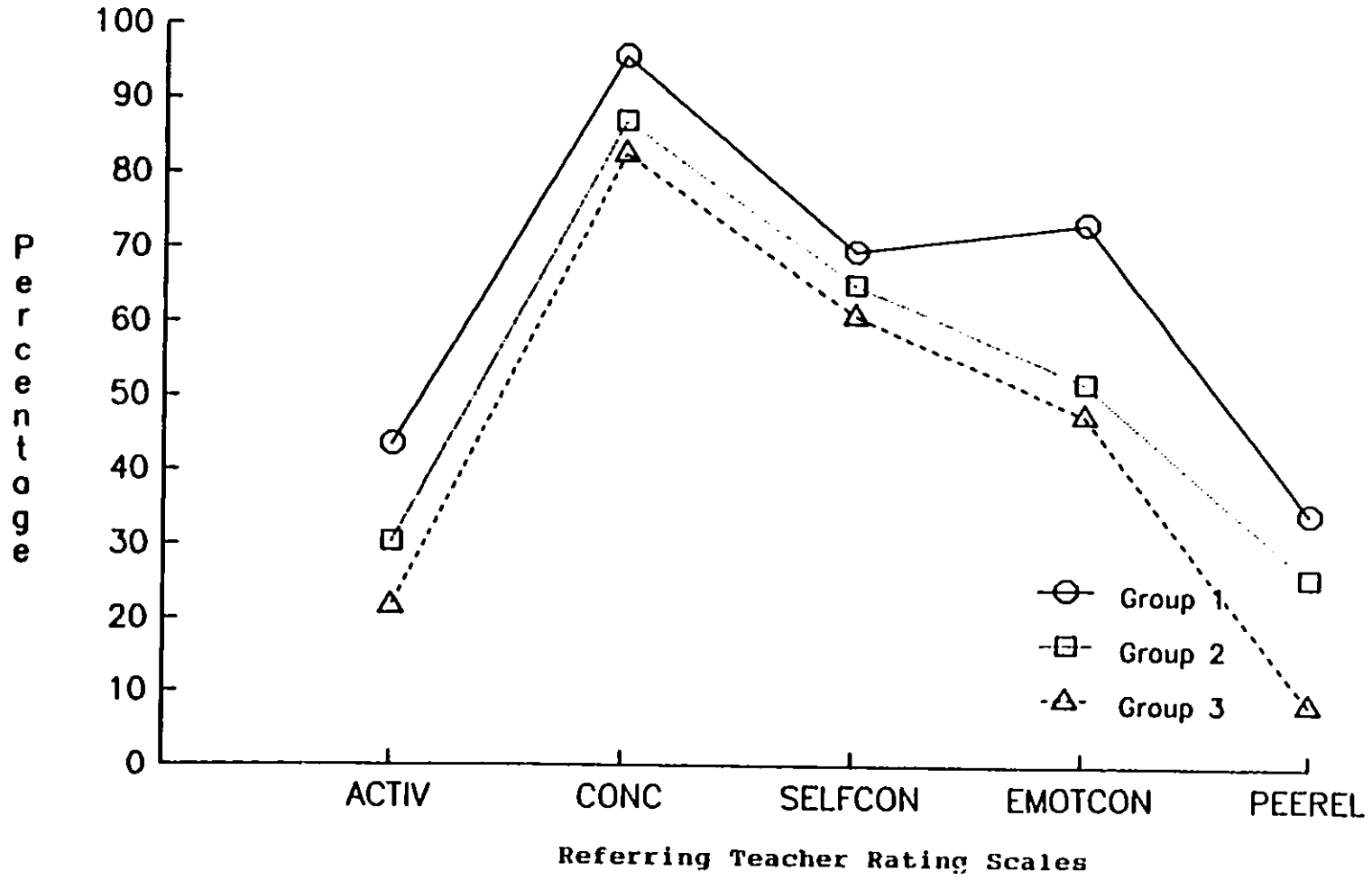

Figure 2. Percentage of children in Group 1, 2, and 3 rated by referring teachers as exhibiting significant emotional/behavioral problems.

years in school Group 1 children were more frequently identified by their teachers as behaviorally and socially maladjusted. Whether similar trends were evident in the results for special education teacher ratings is addressed in the following section.

Walker Behavior Problem Identification Checklist (WPBIC)

Special education teachers rate each child on five subscales of this instrument (Acting-Out, Withdrawal, Distractibility, Disturbed Peer Relations and Immaturity) following placement of the student in the full-time special class program. All subscale scores and an Overall Emotional/Behavioral Problems score were converted to T-scores prior to conducting the group analyses.

Table 4 provides the group mean scores and standard deviations for three consecutive years of teacher ratings on the WPBIC. A T-score of 60 or above on WPBIC scales is considered clinically significant. Inspection of Table 4 indicates that, for the Total sample, none of the scale mean scores exceeded a T-score of 60. On three scales (Distractibility, Immaturity, and Overall Emotional/Behavioral Problems) the Total sample means approached the level of clinical significance for year 1 ratings by teachers. The mean WPBIC profiles for the total sample of learning-disabled students for Years 1, 2 and 3 are plotted in Figure 3.

Group Scores - Year 1 Ratings

The mean WPBIC profiles of the three ability subtype groups for Year 1 ratings are presented in Figure 4. The HP-LV Group 2 profile exhibited

Table 4

Walker Scale Mean Scores for Groups and Total Sample

Walker		Group 1 Year 1	Group 1 Year 2	Group 1 Year 3	Group 2 Year 1	Group 2 Year 2	Group 2 Year 3	Group 3 Year 1	Group 3 Year 2	Group 3 Year 3
Acting-out	M	59.1	61.0	58.8	51.1	50.9	49.1	51.6	51.6	50.2
	SD	15.6	21.0	17.7	7.8	8.3	7.3	8.3	6.4	9.9
With-drawal	M	51.4	49.7	51.9	51.7	46.8	48.0	56.5	51.2	51.2
	SD	10.9	8.1	5.2	10.6	4.6	6.1	12.0	9.8	14.8
Distrac-tibile	M	61.1	62.1	55.8	56.4	52.9	49.2	61.0	53.9	50.6
	SD	13.0	17.3	12.5	9.5	6.1	6.0	11.4	9.0	10.8
Dist. Peer	M	59.7	57.9	52.9	52.0	48.9	49.0	51.4	51.3	51.1
	SD	23.2	22.0	20.6	11.4	5.1	6.2	10.3	9.0	15.4
Immat.	M	60.6	58.7	58.5	58.3	54.0	53.6	60.6	56.4	53.3
	SD	17.6	15.8	16.3	10.5	10.1	7.7	14.9	12.1	15.4
Overall Em./Beh.	M	61.2	60.8	57.2	55.3	51.3	50.5	58.5	54.3	51.4
	SD	12.6	19.0	14.1	8.7	5.9	6.5	9.1	7.5	12.3

continued

Table 4 continued

Walker		Total Sample Year 1	Year 2	Year 3
Acting-out	M	53.9	54.3	52.9
	SD	11.6	13.9	13.1
With-drawal	M	53.7	49.1	48.5
	SD	59.5	56.2	51.9
Distrac-tibility	M	59.5	56.2	51.9
	SD	11.4	12.2	10.3
Disturbed Peer Rel.	M	54.4	52.6	52.4
	SD	16.3	14.1	15.3
Immaturity	M	59.8	56.3	56.0
	SD	14.4	12.8	13.3
Overall Em./Beh.	M	58.3	55.4	53.1
	SD	10.4	12.6	11.5

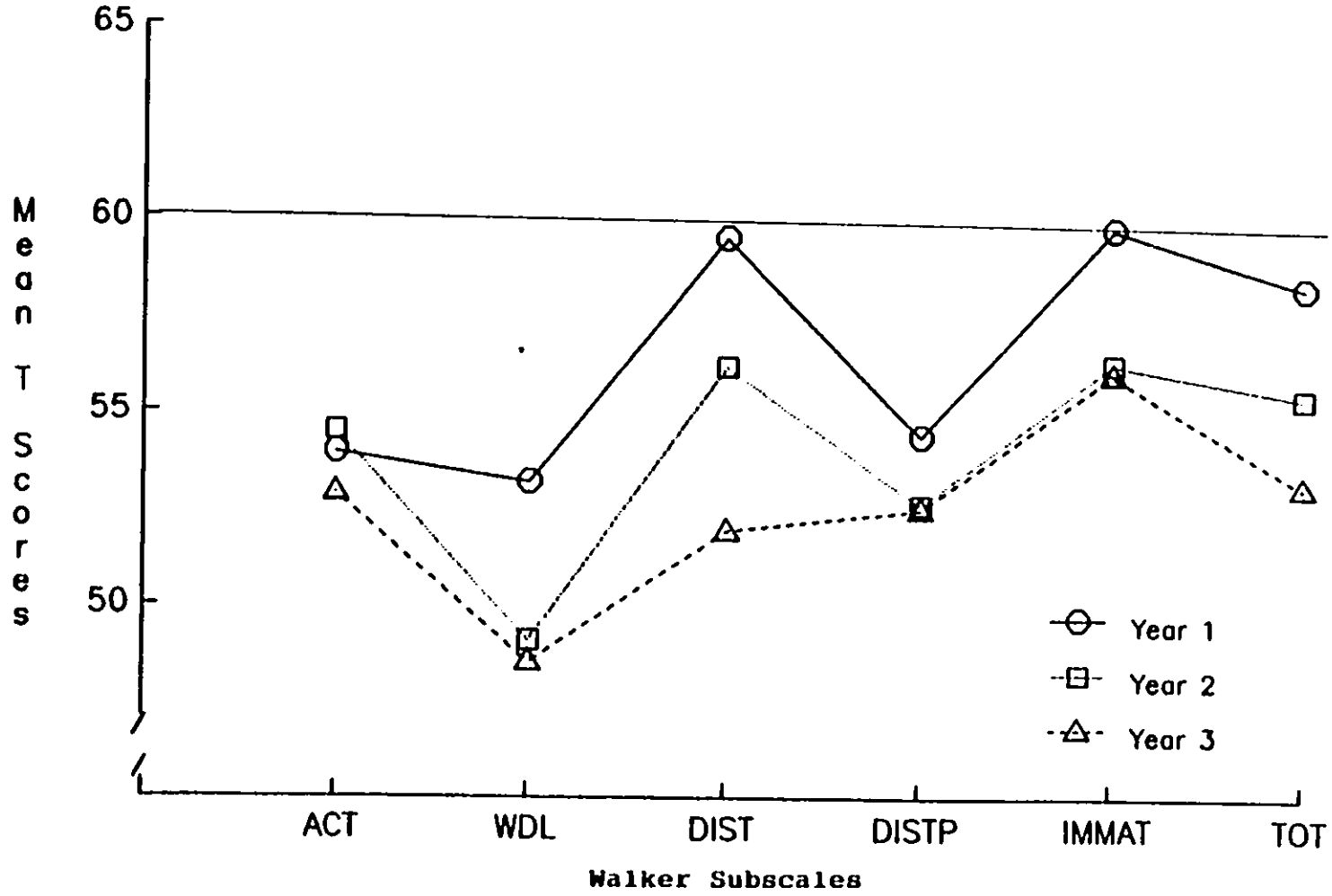

Figure 3. Mean WPBIC profiles for the total sample for three years: special class teacher ratings.

no scale elevations exceeding the T = 60 level. The group mean approached the clinically significant level only on the Immaturity scale (mean score = 58.3). The HV-LP Group 3 profile exhibited two clinically significant behavioral scale elevations (Distractibility and Immaturity) and a moderate elevation for Overall Emotional/Behavioral Problems (mean score = 58.5). The overall profile elevation was highest for the V=P Group 1 children. This group exhibited marked elevations on all subscales except the Withdrawal subscale. Group 1 mean scores exceeded those of Group 2 and Group 3 on all except the Withdrawal scale of the WPBIC.

Separate analyses of variance for the WPBIC scales revealed a significant group effect for the Acting-Out scale (F (2, 66) = 3.74 $p < .03$). A summary of the ANOVA results is presented in Table 5. Post-hoc analyses revealed that Group 1 children received significantly higher teacher ratings than the other two groups on the Acting-Out scale. All other group differences were not significant at the $p < .05$ level. This lack of significant difference was due in part to the fact that all WPBIC scale subgroup means were within one standard deviation of the clinically significant (T = 60) level.

Group Scores - Year 2 and Year 3 Ratings

Examination of Table 4 reveals that for Year 2 and 3 teacher ratings only three group mean scaled scores exceeded the clinically significant level (i.e., Overall Emotional/Behavioral Problems, Acting-Out, and Distractibility ratings for Group 1 at Year 2).

Analyses of variance on teacher rating scale data for each of the

Table 5

Summary of ANOVA Results for the WPBIC Scales - Year 1

Variable		Sum of Squares	df	F	p
Acting-Out		931.86	2	3.74	.03*
	error	8225.91	66		
Withdrawal		373.94	2	1.50	.23
	error	8244.61	66		
Distractibility		322.81	2	1.24	.30
	error	8576.43	66		
Disturbed Peer Rel.		980.89	2	1.90	.16
	error	17027.30	66		
Immaturity		82.99	2	.19	.82
	error	14059.56	66		
Overall Em./Beh. Disturbance		402.81	2	1.91	.16
	error	6966.52	66		
Year 2					
Acting-Out		1314.92	2	3.53	.04*
	error	10983.61	59		
Withdrawal		182.81	2	1.52	.23
	error	3556.86	59		
Distractibility		1076.42	2	3.85	.03*
	error	8251.05	59		

continued--

Table 5 continued

Variable	Sum of Squares	df	F	p
Disturbed	901.04	2	2.29	.11
Peer Rel. error	11614.20	59		
Immaturity	234.09	2	.71	.50
error	9781.66	59		
Overall	976.96	2	3.24	.05*
Em./Beh. error	8887.76	59		
Year 3				
Acting-	1060.64	2	3.36	.04*
Out error	7426.78	47		
With-	143.37	2	.95	.39
drawal error	3535.22	47		
Distac-	463.39	2	2.30	.11
tibility error	4743.83	47		
Disturbed	683.00	2	1.46	.24
Peer Rel. error	10991.10	47		
Immaturity	231.73	2	.69	.50
error	7839.36	47		
Overall	498.70	2	2.12	.13
Em./Beh. error	1321.81	47		

Walker scales at Year 2 revealed significant group effects for the Acting-Out (F (2, 59) = 3.53, $p < .05$), and Distractibility (F (2, 59) = 3.85, $p < .05$) scales, as well as for Overall Emotional/Behavioral Problems (F (2, 59) = 3.24, $p < .05$). Post-hoc mean comparison tests revealed that, at Year 2 the teacher ratings were significantly higher for Group 1 than Group 2 for Overall Emotional/Behavioral Problems ($p < .05$). Group 1 ratings were also higher than both Groups 2 and 3 on the Distractibility scale ($p < .05$). For the Acting-Out dimension of behavior the higher Group 1 ratings at Year 2 closely approached the $p < .05$ level of significant difference. No significant differences were found for the Walker scales among the three groups at Year 3.

For the purpose of qualitative comparison of the behavioral functioning of the different ability subtypes, the group mean profiles for each year are plotted in Figures 4, 5 and 6.

Inspection of the profiles indicates that: (1) for Year 2 ratings, Group 1 children continued to receive relatively higher ratings than the other two groups on Acting-Out, Distractibility, and Overall Emotional/Behavioral Problems scales; (2) At Year 3 Group 1 scale elevations remained relatively higher than the other two groups on the Acting-Out, Immaturity, and Overall Emotional/Behavioral Problem dimensions; however, the mean scale scores for each dimension were below the (T = 60) level of clinical significance for all three groups; (3) None of the Group 2 or Group 3 Walker Scale elevations approached the clinically significant level at Years 2 and 3.

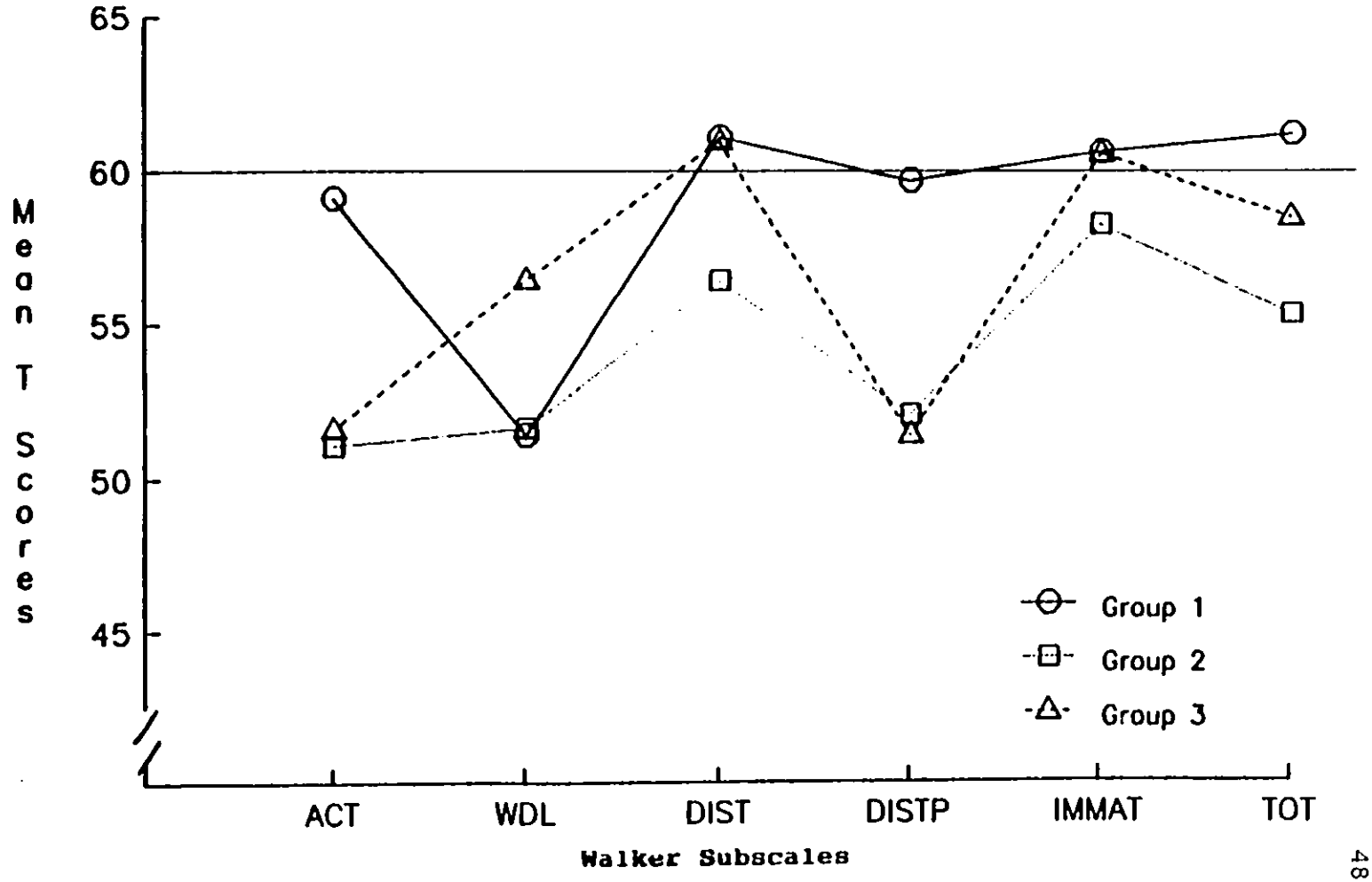

Figure 4. Mean WPBIC profiles for Groups 1, 2, and 3 for Year 1 special class teacher ratings.

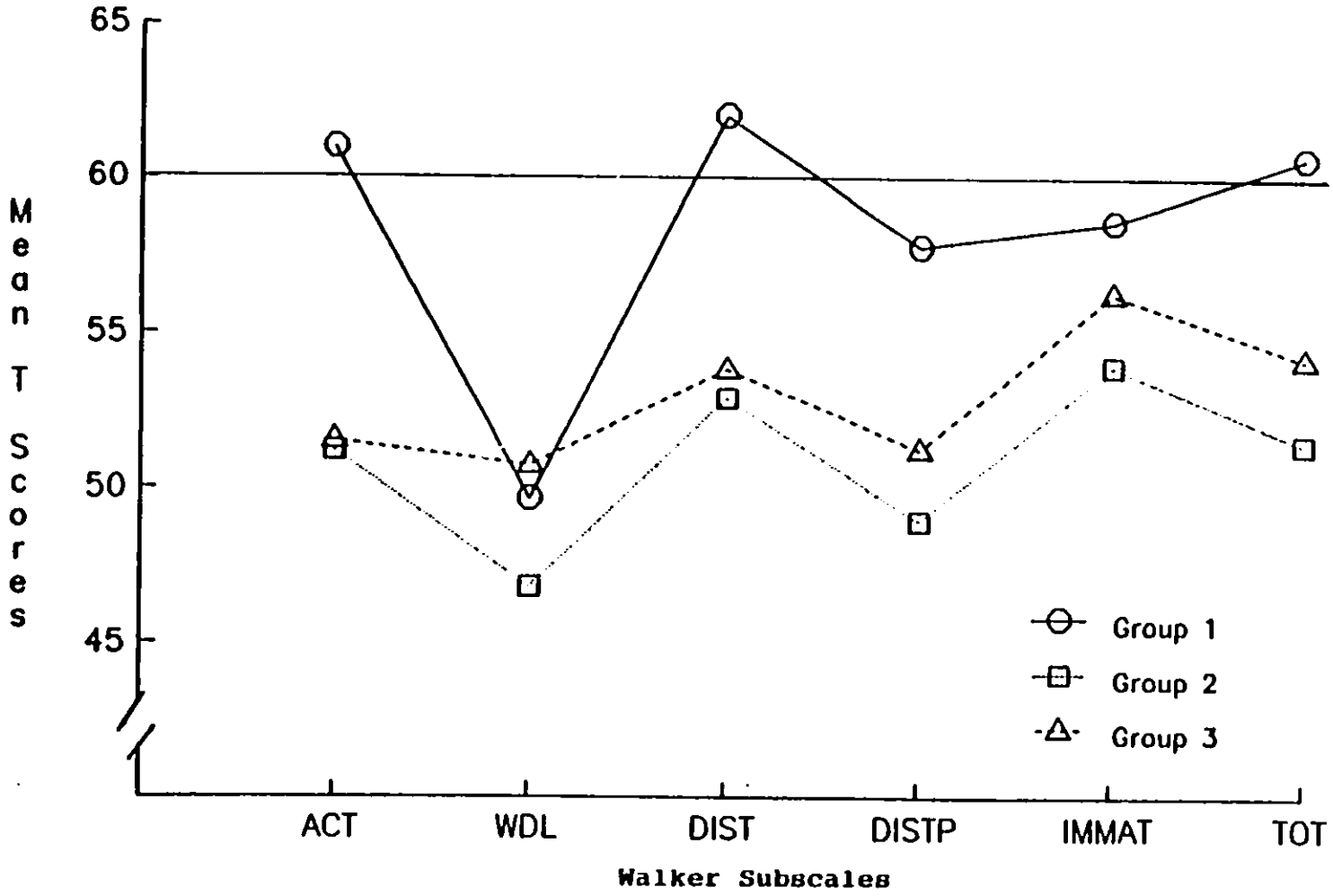

Figure 5. Mean WPBIC profiles for Groups 1, 2, and 3 for Year 2 special class teacher ratings.

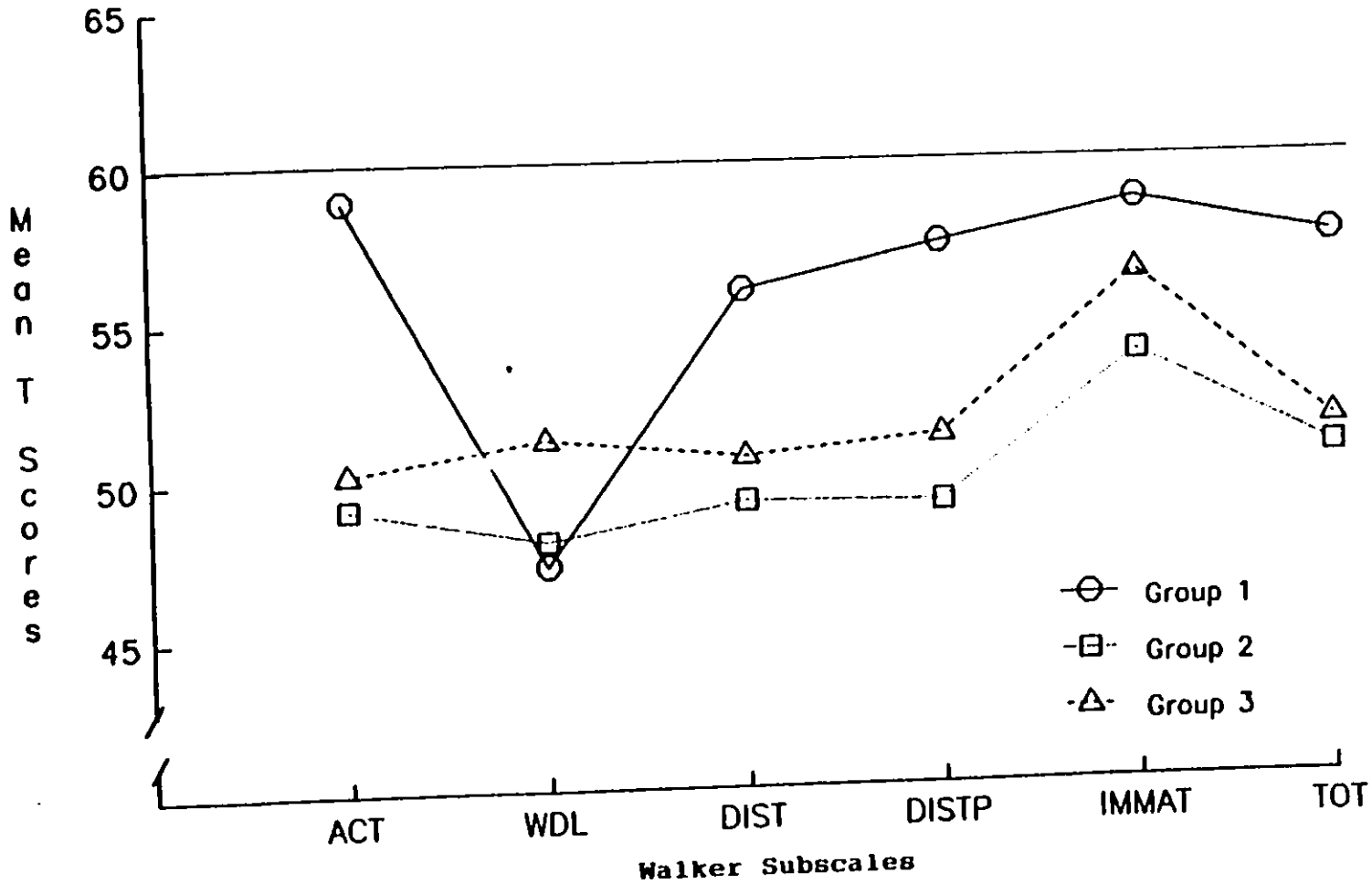

Figure 6. Mean WPBIC profiles for Groups 1, 2, and 3 for Year 3 special class teacher ratings.

Behavioral Functioning and Mainstreaming Outcome

Due to the retrospective design of this study, it was possible to compare the mean WPBIC profiles of subgroups of children who were eventually successfully mainstreamed (SM) to those of children who failed to successfully return to the academic mainstream (UM). The mean WPBIC profiles for SM and UM children for Groups 1, 2, and 3 are presented in Figures 7 through 15.

An inspection of the profiles for SM and UM subgroups within each ability subtype group reveals the following relevant comparisons:

(1) For Group 1, the Year 1 WPBIC scale scores for the UM subgroup exceeded a T-score of 60 on Acting-Out, Disturbed Peer Relations and Immaturity. Both SM and UM subgroups exhibited clinically significantly elevated Distractibility and Overall Emotional/Behavioral Problem scale scores. At Year 2, the Group 1 UM children exhibited relatively higher profile elevations for Acting-Out, Immaturity, and Overall Emotional/Behavioral Problems scales. Both SM and UM subgroups exceeded the T = 60 elevation for the Distractibility dimension. Year 3 ratings for Group 1 indicated continued high elevations for the UM group on only the Acting-Out dimension. The relatively few SM children from Group 1 exhibited clinically significant elevations on the Immaturity and Peer Relationship Problem scales. Tests of statistical significance between SM and UM group means for the WPBIC scales revealed no significant differences ($p > .05$) for any of the yearly teacher ratings.

(2) All scale elevations for Group 2 over the three years were below the clinically significant level, except for the Immaturity scale rating

at Year 1 for the SM subgroup. By Year 3, most behavior scale group means were more than one standard deviation below the clinically significant level for both SM and UM Group 2 children. No statistically significant differences were found between UM and SM group means on the WPBIC scales at any year for Group 2 children.

(3) For each of the three years, the Group 3 SM children's behavior scale elevations were below the clinically significant level. The UM subgroup, however, exhibited mean scale scores exceeding the clinically significant level at Year 1 for Distractibility, Immaturity, and Overall Emotional/Behavioral problems. For Year 2 ratings, the UM subgroup exhibited relatively elevated scores only on the Immaturity scale. Year 3 profiles were clinically significantly elevated for the UM children on the Immaturity and Overall Emotional/Behavioral Problems scales. By Year 3, the UM subgroup also exhibited a Withdrawal scale mean score approaching the clinically significant elevation level.

Group mean comparison tests revealed statistically significantly higher WPBIC ratings for Group 3 UM children: (a) for the measures of Acting-Out, Distractibility, Immaturity and Overall Emotional/Behavioral Problems at Year 1; and (b) for Acting-Out, Immaturity and Overall Emotional/Behavioral Problems at Year 3 ($\underline{p} < .05$).

Table 6 presents the WPBIC scale group means and standard deviations for each of the three years for SM and UM subgroups of Groups 1, 2, and 3.

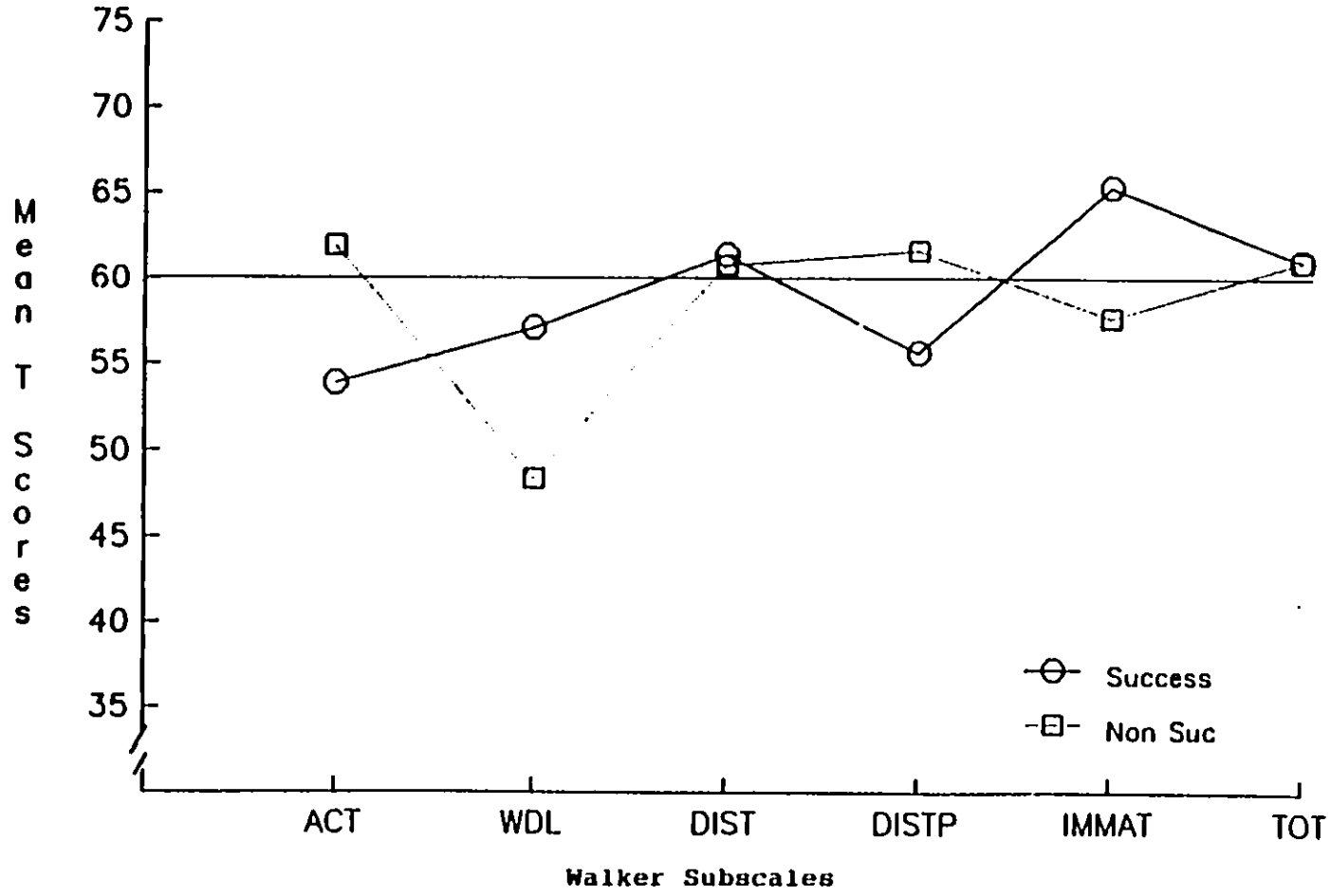

Figure 7. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 1 children for Year 1 special class teacher ratings.

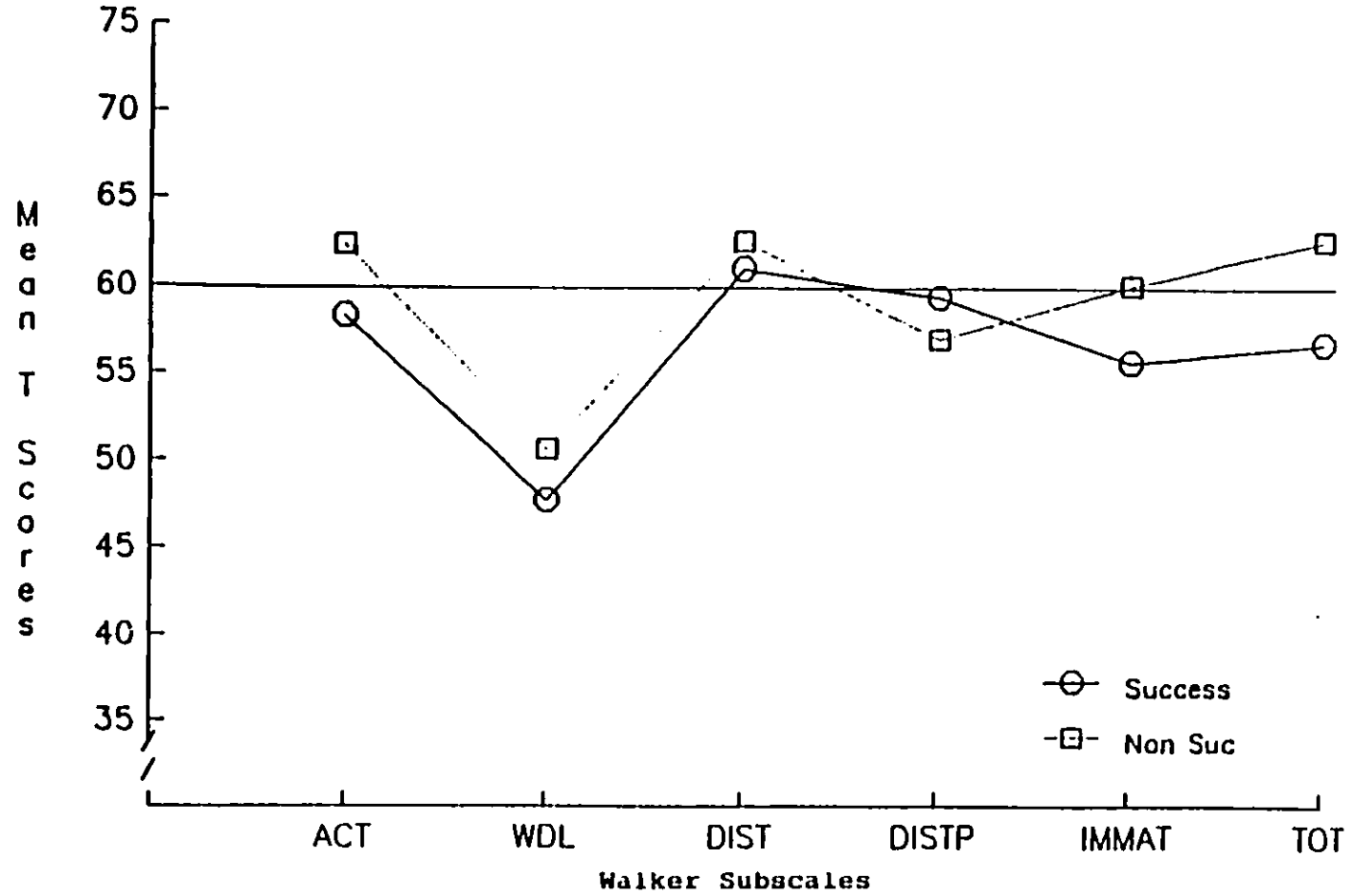

Figure 8. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 1 children for Year 2 special class teacher ratings.

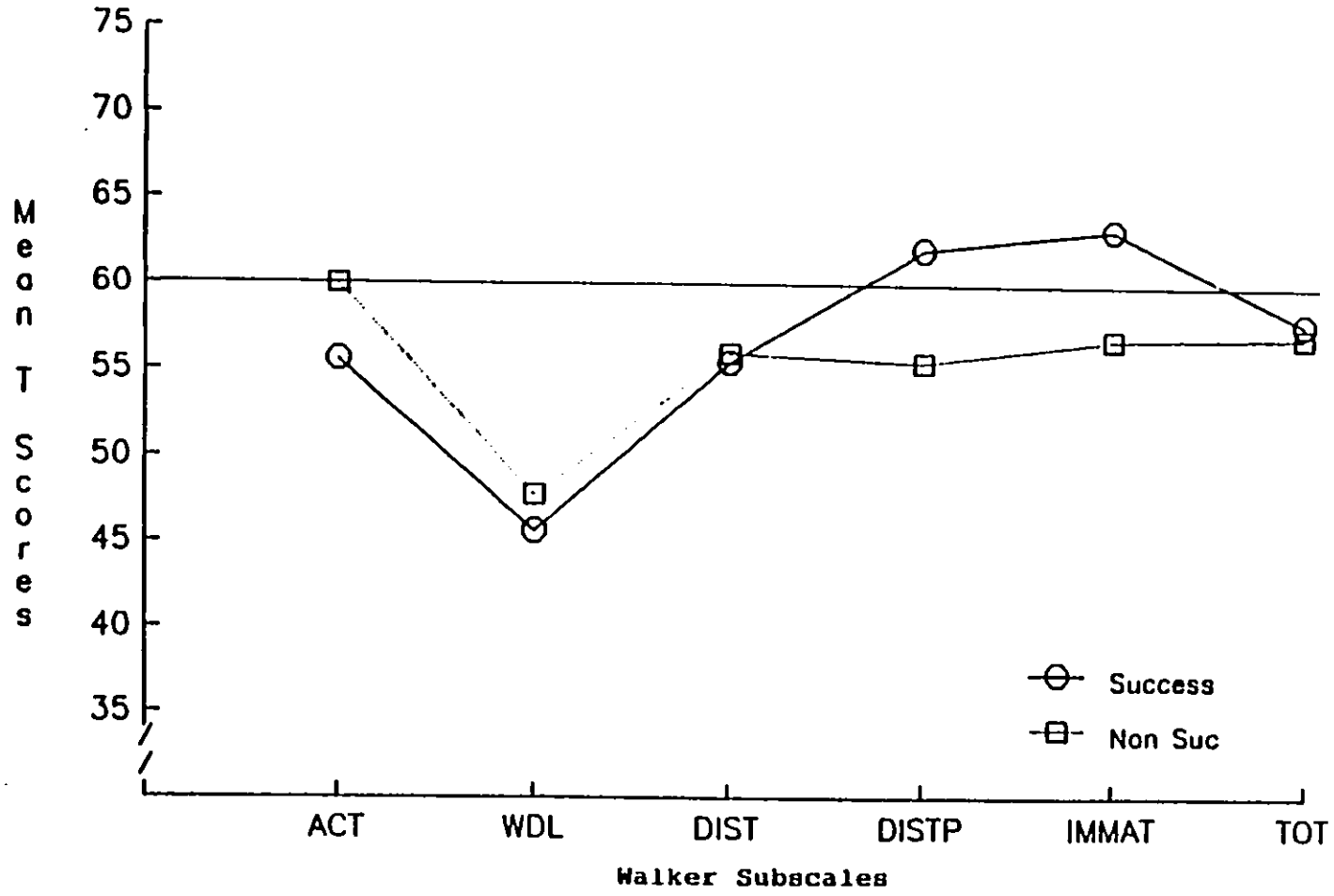

Figure 9. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 1 children for Year 3 special class teacher ratings.

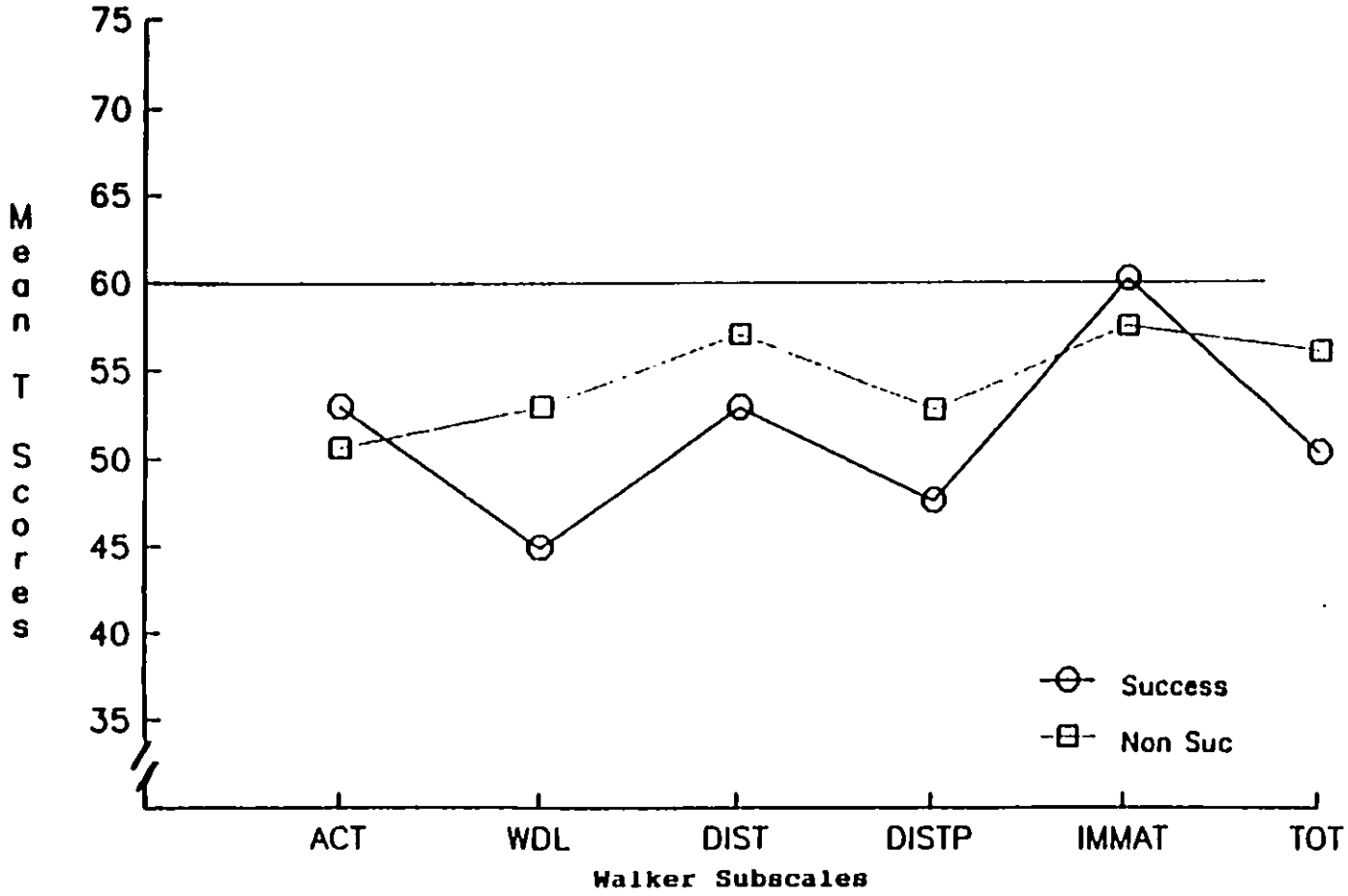

Figure 10. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 2 children for Year 1 special class teacher ratings.

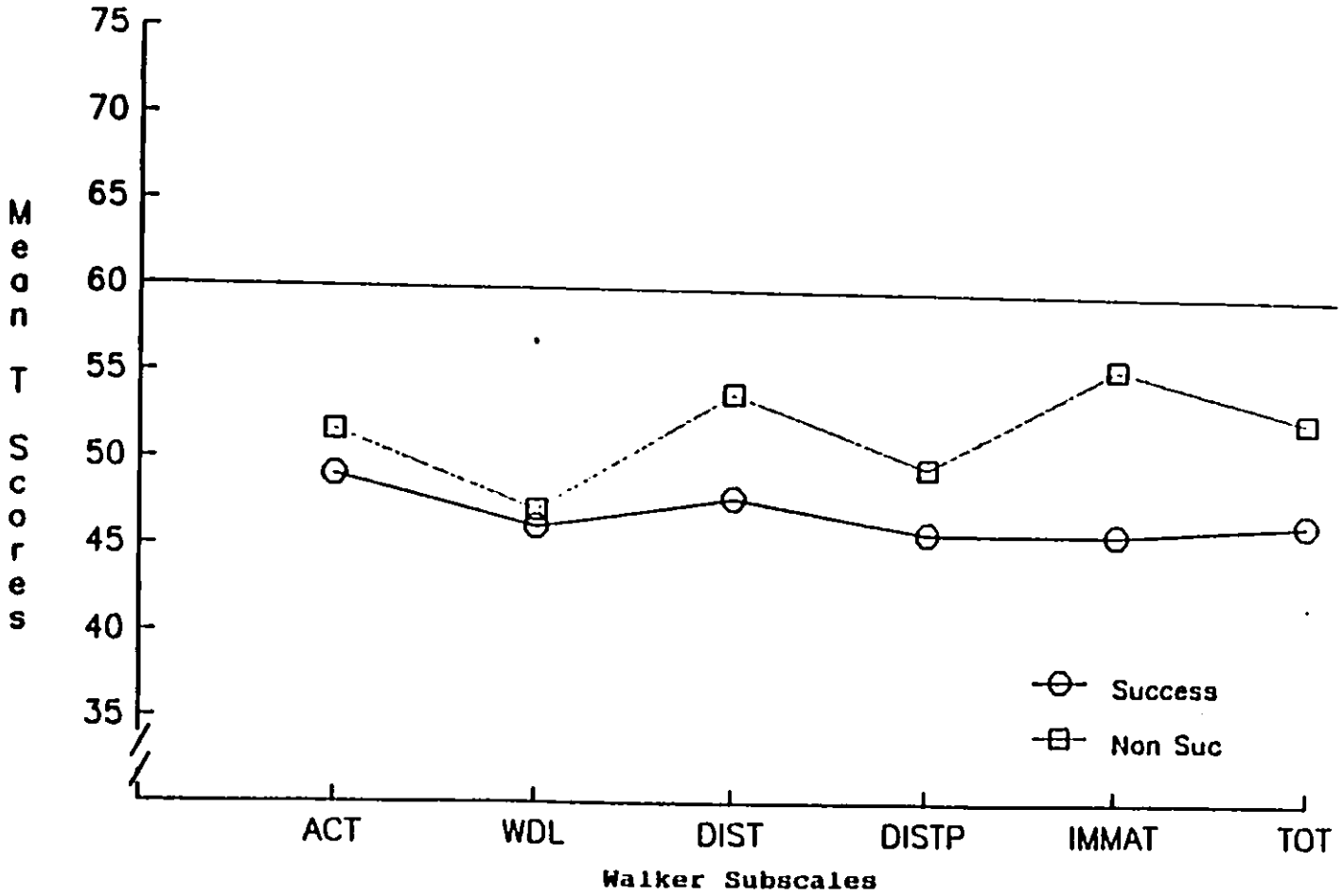

Figure 11. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 2 children for Year 2 special class teacher ratings.

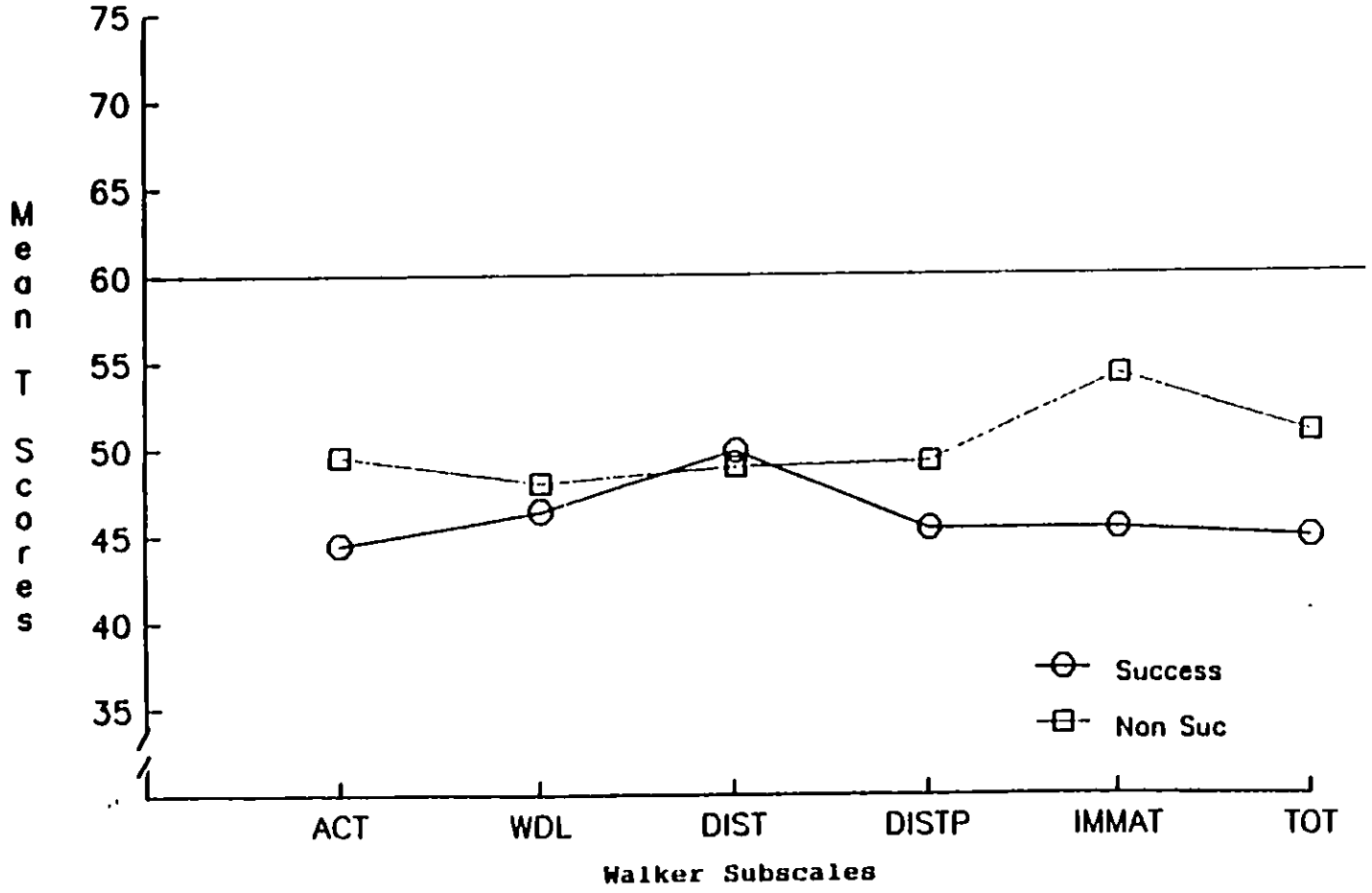

Figure 12. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 2 children for Year 3 special class teacher ratings.

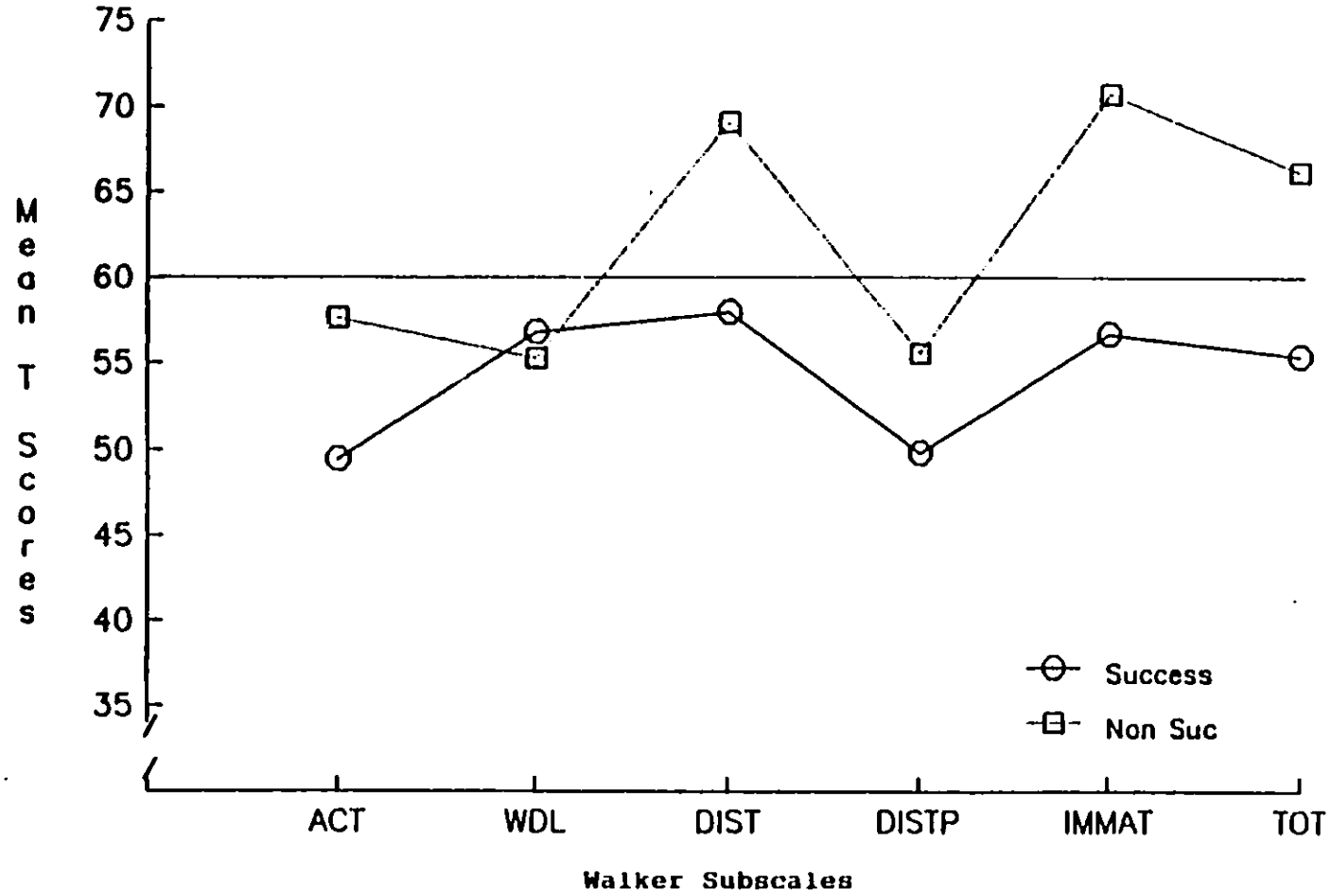

Figure 13. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 3 children for Year 1 special class teacher ratings.

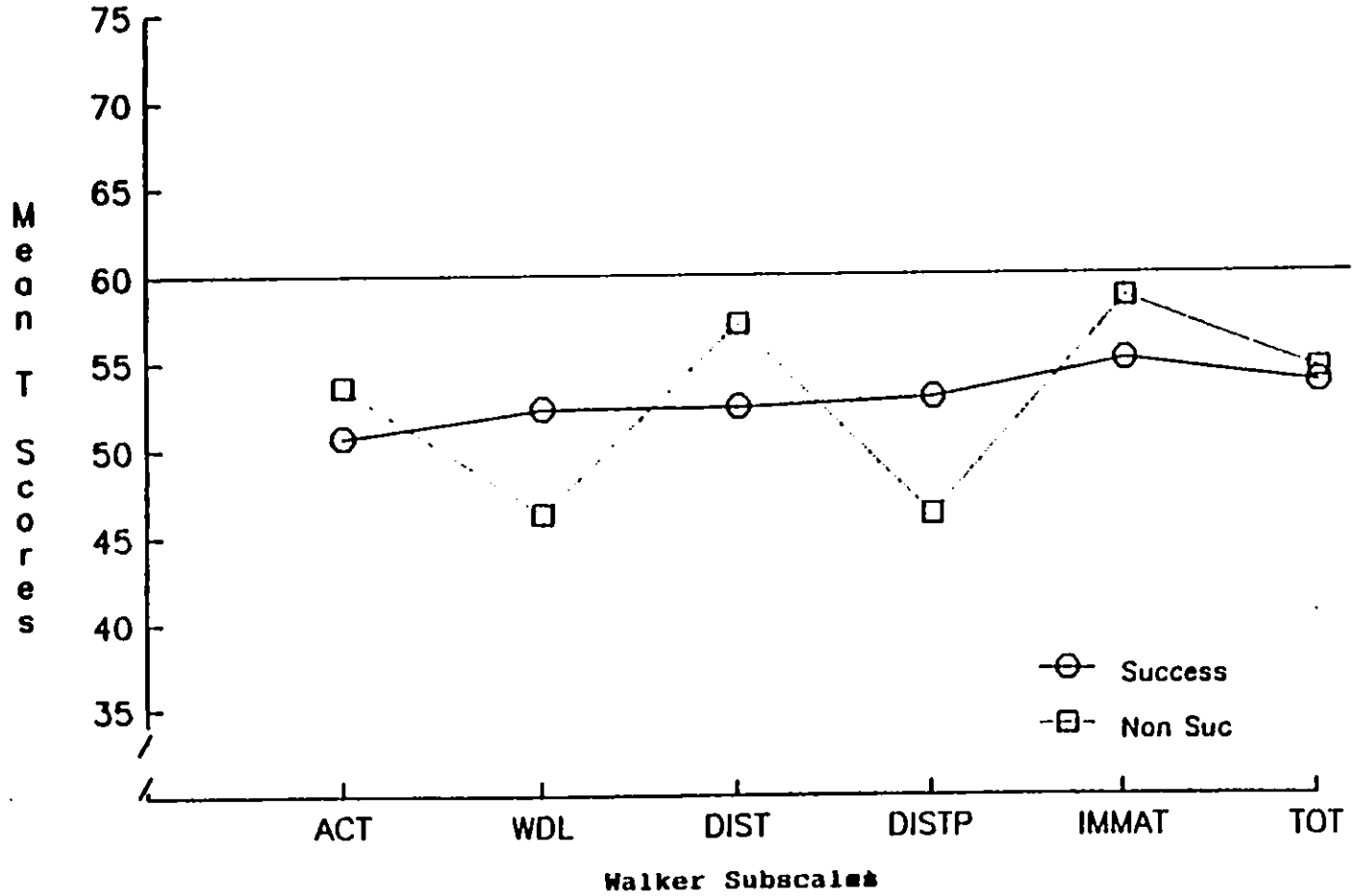

Figure 14. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 3 children for Year 2 special class teacher ratings.

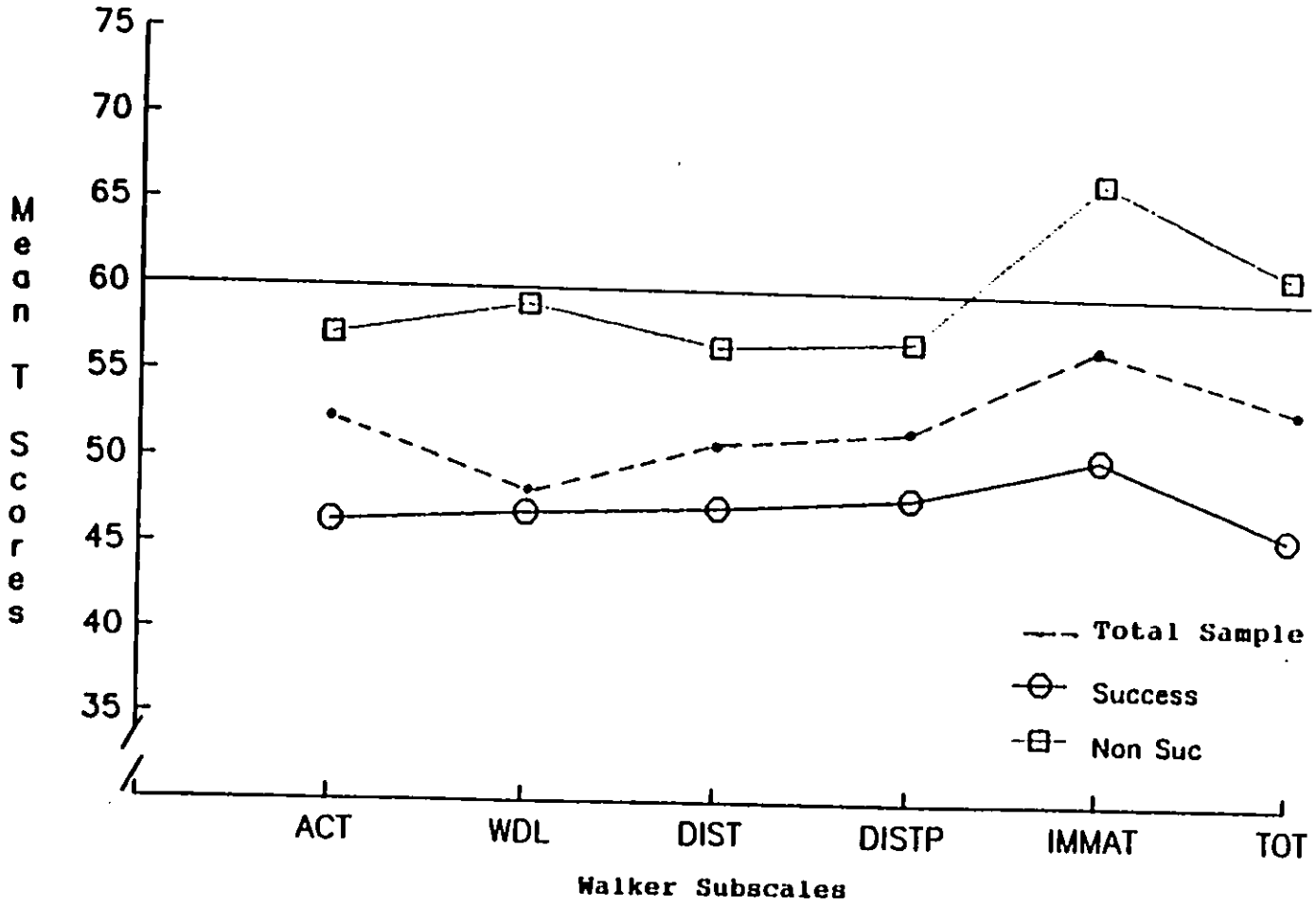

Figure 15. Mean WPBIC profiles for successfully and unsuccessfully mainstreamed Group 3 children for Year 3 special class teacher ratings.

Table 6

WPBIC Scale Ratings Over Three Years for Successfully and Unsuccessfully Mainstreamed Children by Group

Walker Scales		Group 1 Year 1 SM n=8	Year 1 UM n=15	Year 2 SM n=7	Year 2 UM n=14	Year 3 SM n=5	Year 3 UM n=14
Acting-out	M	53.9	61.9	58.3	62.4	55.6	60.0
	SD	7.8	18.1	23.2	20.6	15.1	18.9
With-drawal	M	57.1	48.4	47.7	50.4	45.6	47.7
	SD	16.0	5.5	6.0	9.1	1.3	5.9
Distra-ctibility	M	61.5	60.9	61.0	62.6	55.4	55.9
	SD	9.9	14.8	16.8	18.1	11.0	13.4
Dist. Peer Rel.	M	55.8	61.8	59.4	57.1	62.0	55.4
	SD	22.7	23.6	25.0	21.3	22.5	20.5
Immatur.	M	65.6	57.9	55.7	60.1	63.2	56.8
	SD	19.3	16.9	11.5	17.7	20.3	15.2
Overall Em./Beh.	M	61.4	61.1	56.9	59.9	57.8	57.0
	SD	12.2	13.2	12.9	21.6	13.1	15.0

continued

Table 6 continued

Scales		Group 2					
		Year 1		Year 2		Year 3	
	c	SM n=4	UM n=19	SM n=3	UM n=19	SM n=2	UM n=18
Acting-out	M	53.0	50.7	49.0	51.6	44.5	49.6
	SD	6.5	8.2	7.8	8.6	.7	7.6
With-drawal	M	45.0	53.1	46.0	46.9	46.5	48.2
	SD	0.0	11.2	1.7	4.9	2.1	6.4
Distra-ctibility	M	53.0	57.2	47.7	53.7	50.0	49.1
	SD	8.0	9.9	8.1	5.5	9.9	5.9
Dist. Peer Rel.	M	47.8	52.9	45.7	49.5	45.5	49.4
	SD	3.6	11.8	.6	5.4	.7	6.4
Immatur.	M	60.5	57.8	45.7	55.3	45.5	54.5
	SD	11.1	10.5	.6	10.3	.7	7.6
Overall Em./Beh.	M	50.5	56.3	46.3	52.3	45.0	51.1
	SD	7.7	8.8	3.1	5.9	2.8	6.5

continued

Table 6 continued

Scales		Group 3					
		Year 1		Year 2		Year 3	
		SM n=17[c]	UM n=6	SM n=16	UM n=6	SM n=9	UM n=5
Acting-out	M	49.5	57.7	50.8	53.7	46.3	57.2
	SD	7.3	8.4	6.5	6.1	2.5	14.6
With-drawal	M	56.9	55.3	52.4	46.3	46.9	59.0
	SD	11.8	7.7	11.0	1.5	4.3	23.6
Distra-ctibility	M	58.1	69.2	52.6	57.3	47.2	56.6
	SD	10.8	8.9	9.0	8.9	6.6	15.0
Dist. Peer Rel.	M	49.9	55.7	53.1	46.3	47.9	57.0
	SD	8.3	14.6	9.9	1.5	5.8	25.2
Immatur.	M	56.8	71.0	55.4	59.0	50.3	66.6
	SD	12.3	17.6	12.4	11.8	9.2	19.6
Overall Em./Beh.	M	55.6	66.5	54.1	54.8	45.9	61.2
	SD	8.1	7.0	8.3	5.2	3.7	16.6

[c] Missing data for some children resulted in the decreasing group ns over the three years for each group.

Mainstreaming Success and Reading Achievement

Mainstreaming Success

The frequency and percentage of successfully and unsuccessfully mainstreamed children for the total learning-disabled sample and for each subgroup are presented in Table 7. As a group the majority of the sample of learning-disabled children (i.e., 58%) failed to return successfully to the academic mainstream. Chi-square analysis, however, revealed that subtype group membership was related to mainstreaming success ($\chi^2(2, N = 69) = 15.81, p < .001$). Few Group 1 (35%) and Group 2 (17%) members were successfully mainstreamed, while 74% of Group 3 members successfully returned to regular class programs after a period of full-time special education.

Reading Progress

Table 8 provides the frequency and percentages of each group and the total sample that achieved reading scores within the average range (i.e., T-score $\geq$ 40) on each administration of the Gates reading test. As this Table illustrates, a majority of the learning-disabled students (51%) achieved average range reading scores after three years of full-time special education. Inspection of the breakdown by ability pattern group in Table 8 reveals, however, that Group 3 children are largely responsible for the observed frequency of reading success for the overall sample. That is, 70% of Group 3 members achieved T-scores $\geq$ 40 at year 3 on the Gates test.

This is illustrated further in Table 9, which presents the mean

Table 7

Frequency and Percentage of SM and UM Children by Group

Group	Successfully Mainstreamed		Unsuccessfully Mainstreamed	
	Frequency	%	Frequency	%
Group 1 n=23	8	35	15	65
Group 2 n=23	4	17	19	83
Group 3 n=23	17	74	6	26
Total Sample n=69	29	42	40	58

Table 8

Frequency and Percentage of Average Range Scores on the Gates Reading Comprehension Test

Group	Year 1		Year 2		Year 3	
	Freq.	%	Freq.	%	Freq.	%
Group 1 (V=P)	4	17	6	26	9	39
Group 2 (HP-LV)	3	13	6	26	10	44
Group 3 (HV-LP)	11	48	10	44	16	70
Total Sample	18	26	22	31	35	51

Table 9

Means and Standard Deviations for Group Performance on the Gates Reading Comprehension Test

Group		Year 1	Year 2	Year 3
Group 1	M	33.6	35.6	37.4[a]
	SD	6.6	5.0	6.7
Group 2	M	34.4	35.7	36.9[a]
	SD	6.2	6.0	6.9
Group 3	M	36.9	39.7	43.4[b]
	SD	9.8	9.6	9.5
Total Sample	M	34.9	37.0	39.2
	SD	7.8	7.4	8.2

Means with different superscripts differ significantly at $p < .05$. These refer specifically to paired comparisons between group means at each year.

T-scores and standard deviations for the total sample as well as for each ability group for three annual administrations of the Gates test. Inspection of this table reveals that, as a group, the overall learning-disabled sample failed to achieve Gates scores within the average range on any of the three administrations of the test. Examination of group mean scores reveals that only Group 3 exceeded the T = 40 level in reading score after three years in special classes. Figure 16 illustrates the three year progress in reading achievement for the three groups.

A one-way repeated measures ANOVA revealed a significant time (F (2, 118) = 18.10, $p < .001$) and group effect (F (2, 59) = 3.26, $p < .05$). The time by group interaction effect was not significant (F (4, 118) = 1.12, $p > .05$). The results of post-hoc tests indicated that Group 3 members achieved significantly higher reading scores than both Group 1 and Group 2 members at Year 3 ($p < .05$).

Reading Achievement and Mainstreaming Success

In order to clarify the relationship between early reading achievement and later mainstreaming success or failure, Gates group scores were computed for eventually successfully mainstreamed (SM) and unsuccessfully mainstreamed (UM) children of Groups 1, 2 and 3. The mean Gates reading scores for the total sample and ability subtype groups by mainstreaming success type are presented in Table 10.

Initially, a two-way repeated measures ANOVA was conducted for the total learning-disabled sample. A significant main effect for mainstream-

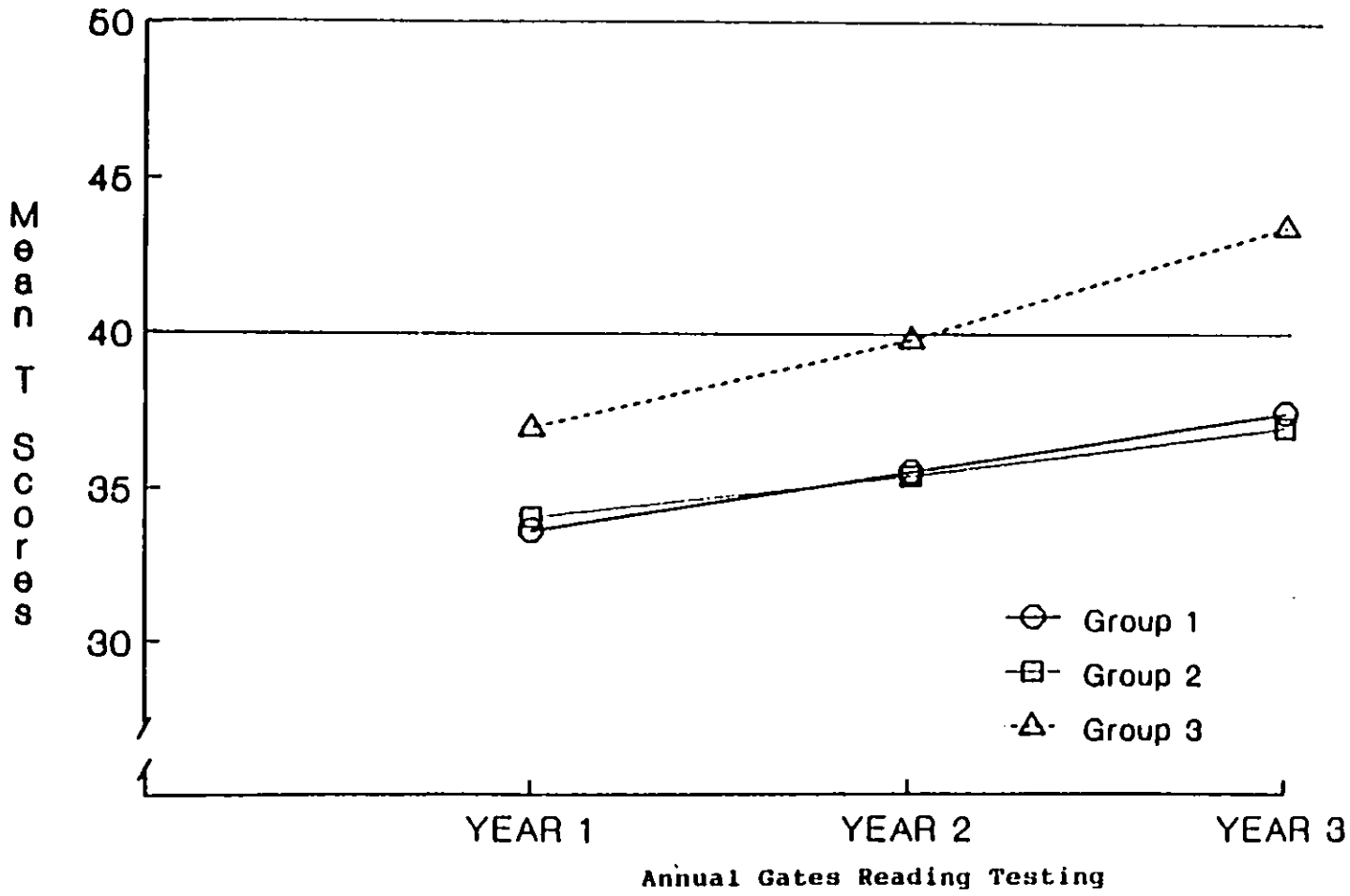

Figure 16. Reading progress over three years for each ability structure group.

ing success (F (1, 56) = 5.48, $p < .05$) and time (F (2, 112) = 11.40, $p < .001$) was found. Overall group effect (F (2, 56) = 1.11, $p > .05$) and group by mainstreaming success interaction effects (F (2, 56) = .83, $p > .05$) were not significant.

Student-Newman-Keuls tests of comparisons among SM and UM subgroups for the total sample revealed that: (1) by Year 2 of their special education program the SM subgroup achieved significantly higher reading scores than the UM subgroup ($p < .05$); and (2) this reading achievement difference favoring the SM group continued through Year 3 ($p < .05$). A summary of the ANOVA results is presented in Table 11.

Table 12 presents the frequency and percentages of SM and UM children in Groups 1, 2 and 3 that achieved T-scores $\geq$ 40 on the Gates reading test for each administration of the test. A greater percentage of SM than UM group members achieved average range T-scores for each year of testing.

Further, to examine within group differences in reading achievement related to mainstreaming success, separate repeated measures ANOVAs on Gates reading data were conducted for each ability subtype group. The ANOVA results for Group 1 reading achievement revealed a significant overall effect for time (F (2, 38) = 5.42, $p < .01$). There were no significant mainstreaming success (F (1, 19) = .38, $p > .05$) or time by mainstreaming success interaction (F (2, 38) = .58 $p > .05$) effects. As a group, Group 1 members' Year 3 Gates reading scores were significantly higher than their Year 1 scores on this test ($p < .01$).

The results of the ANOVA for Group 2 SM and UM children indicated a

Table 10

Means and Standard Deviations for Gates Reading by Group and Mainstreaming Success

Group	Year 1		Year 2		Year 3	
	M	SD	M	SD	M	SD
Group 1						
SM (n=8)[c]	33.9	7.3	36.4	6.3	39.4	4.2
UM (n=15)	33.5	6.5	35.1	5.0	36.4	7.6
Group 2						
SM (n=4)	40.0	7.1	44.3[a]	2.6	42.3	11.6
UM (n=19)	33.1	5.8	33.9[b]	4.9	36.0	14.7
Group 3						
SM (n=17)	37.9	9.4	40.6	8.3	44.9	7.5
UM (n=6)	34.0	10.3	37.2	12.3	38.8	14.1
Total Sample						
SM (n=29)	38.1	8.6	41.1[a]	7.4	43.1[a]	7.4
UM (n=40)	33.7	6.6	35.0[b]	6.3	36.5[b]	7.8

Means with different superscripts differ significantly at $p<.05$

[c] For Year 3 missing data for some children resulted in the following n: Group 1 (SM=7, UM=14), Group 2 (SM=3, UM=18), Group 3 (SM=15, UM=5), Total Sample (SM=25, UM=39).

Table 11

Summary of ANOVA Results for the Gates Reading Test for Successfully and Unsuccessfully Mainstreamed Children

Variable	Sum of Squares	df	F	p
Year 1 Reading				
Group	133.53	2	1.19	.31
Success	106.91	1	1.90	.17
Group by Success	75.71	2	.67	.51
Error	3146.23	56		
Year 2 Reading				
Group	247.85	2	3.05	.06
Success	189.30	1	4.65	.04*
Group by Success	142.28	2	1.75	.18
Error	2278.27	56		
Year 3 Reading				
Group	532.83	2	4.50	.02*
Success	261.65	1	4.42	.04*
Group by Success	26.59	2	.22	.80
Error	3315.33	56		

* $p < .05$

Table 12

Frequency and Percentage of Average Range Scores on the Gates Reading Test by Group and Mainstreaming Success

Group	Year 1		Year 2		Year 3	
	Freq.	%	Freq.	%	Freq.	%
Group 1						
SM (n=8)[C]	1	13	2	25	4	50
UM (n=15)	3	20	4	27	5	33
Group 2						
SM (n=4)	1	25	4	100	3	75
UM (n=19)	2	11	2	11	7	36
Group 3						
SM (n=17)	10	59	9	53	15	88
UM (n=6)	1	17	1	17	1	17
Total Sample						
SM (n=29)	12	41	15	52	22	76
UM (n=40)	6	15	7	18	13	33

[C] For Year 3 missing data for some children resulted in the following n: Group 1 (SM=7, UM=14), Group 2 (SM=3, UM=18), Group 3 (SM=15, UM=5), Total Sample (SM=25, UM=39).

significant mainstreaming success effect (F (1, 19) = 6.41, $p < .05$). The time (F (2, 38) = 1.96, $p > .05$) and time by success interaction effect (F (2, 38) = 1.06, $p > .05$) were not significant. Inspection of the Year 2 group means reveals that the SM group scored significantly higher than the UM group on the second administration of the Gates reading test ($p < .01$).

The ANOVA results for Group 3 children revealed a significant time effect (F (1, 18) = 5.68, $p < .05$) but no significant mainstreaming success (F (1, 18) = 1.09, $p > .05$) or time by mainstreaming success (F (2, 36) = .34, $p > .05$) effects. Reading achievement did increase significantly ($p < .05$) for the overall Group 3 sample each year of their special education program.

Examination of the mean Gates T-scores for SM and UM children within each ability subtype group (see Table 10) revealed that: (1) UM children, for all three ability subtype groups, as a group failed to achieve reading comprehension levels within the average range after three years of special education programs and (2) Group 2 and 3 SM children achieved mean reading scores within the average range by Year 1 (HP-LV) or Year 2 (HV-LP) of Gates testing. Group 1 SM children achieved a mean reading score approaching the lower limits of the average range (mean = 39.4) by the third year of their special education program. Figures 17 through 19 illustrate the trends in reading achievement over three years for the SM and UM subgroups of Groups 1, 2, and 3.

Finally, as illustrated in Table 12, a significantly greater percentage of Group 2 SM children than UM children achieved average range

reading scores on the second and third administration of the Gates. For Group 3, this percentage differential favoring SM children was evident on all three Gates administrations. Only at year 3 did more SM than UM members of Group 1 achieve Gates reading scores within the lower limits of the average range.

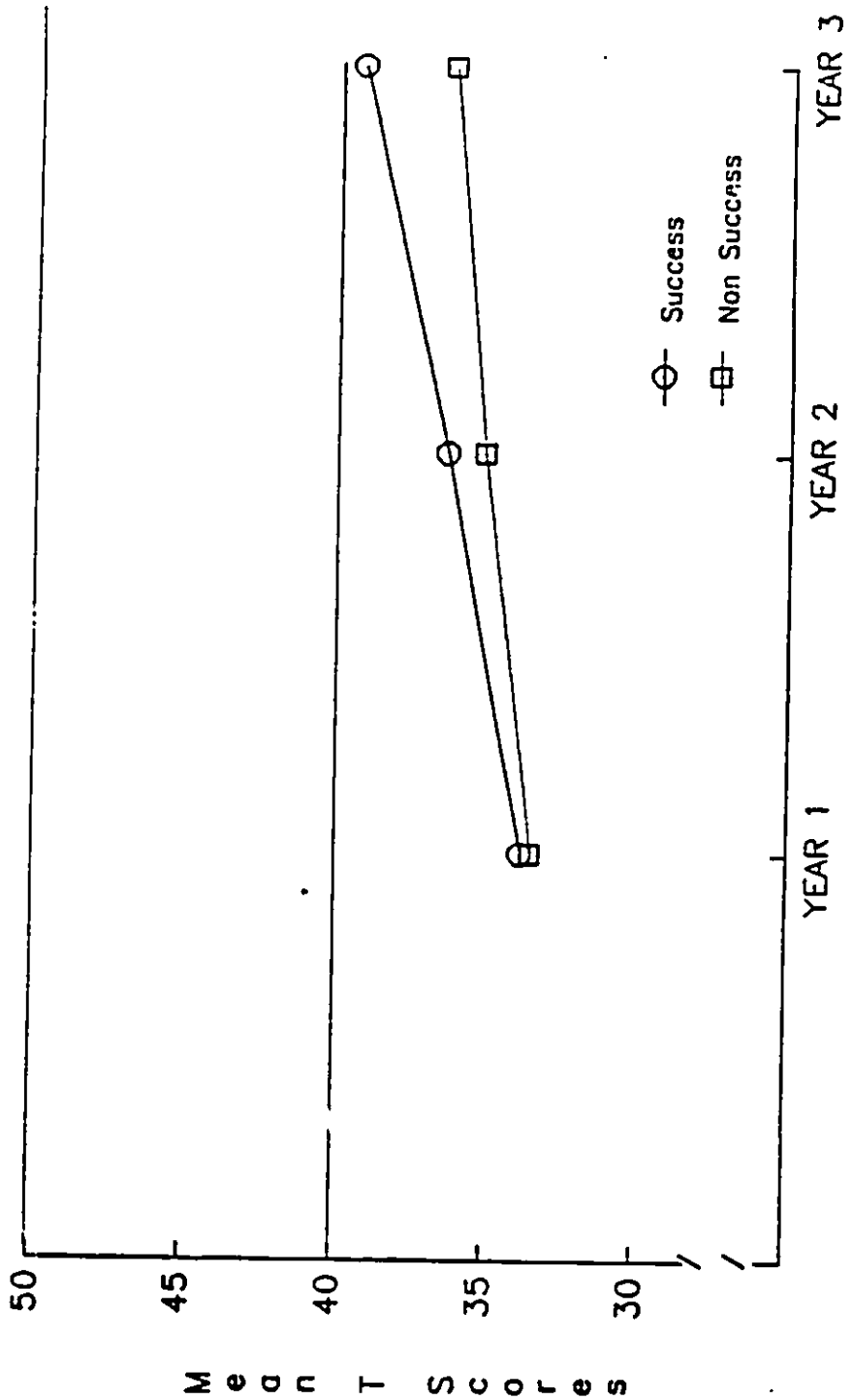

Figure 17. Reading progress over three years for successfully and unsuccessfully mainstreamed children of Group 1.

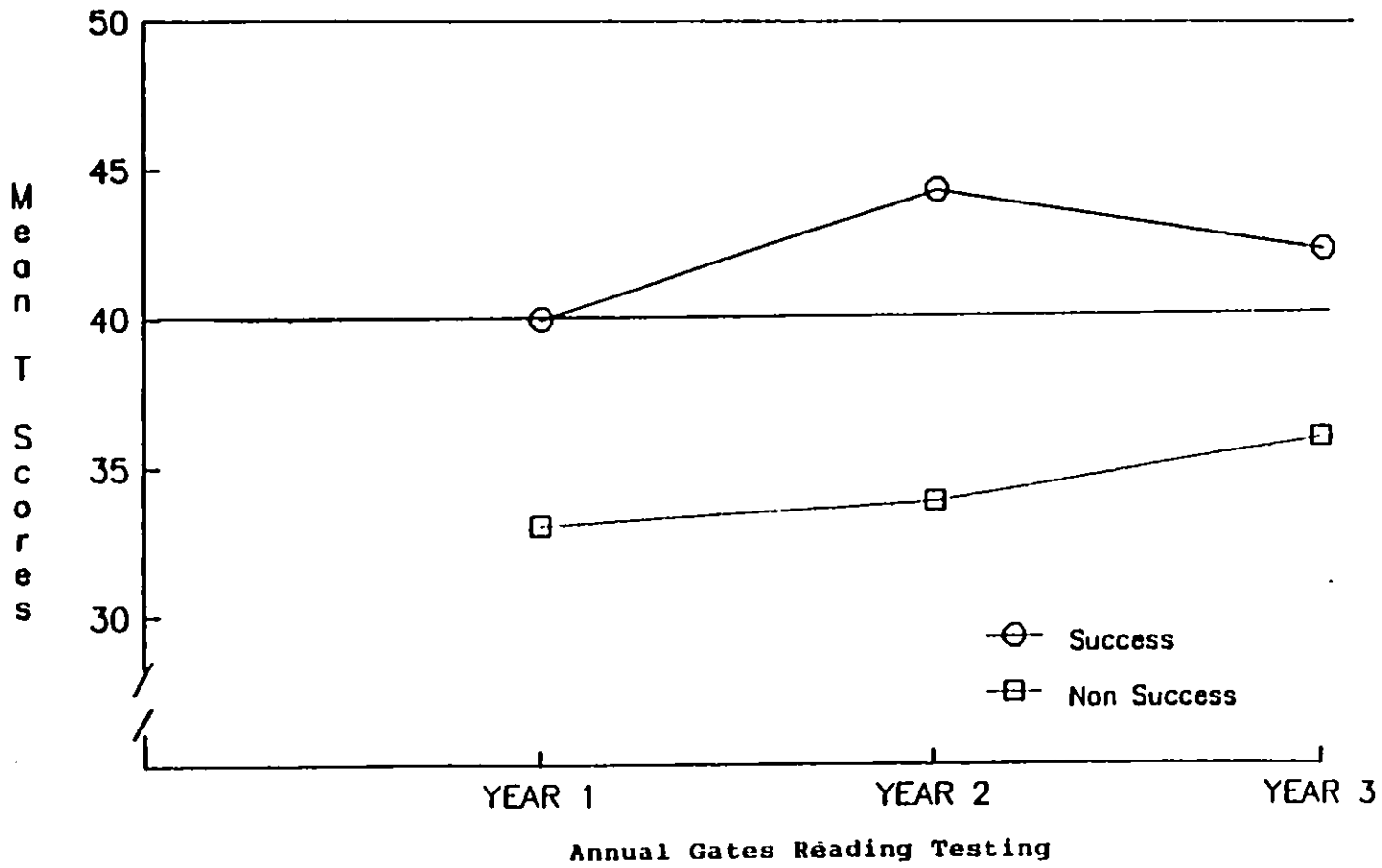

Figure 18. Reading progress over three years for successfully and unsuccessfully mainstreamed children of Group 2.

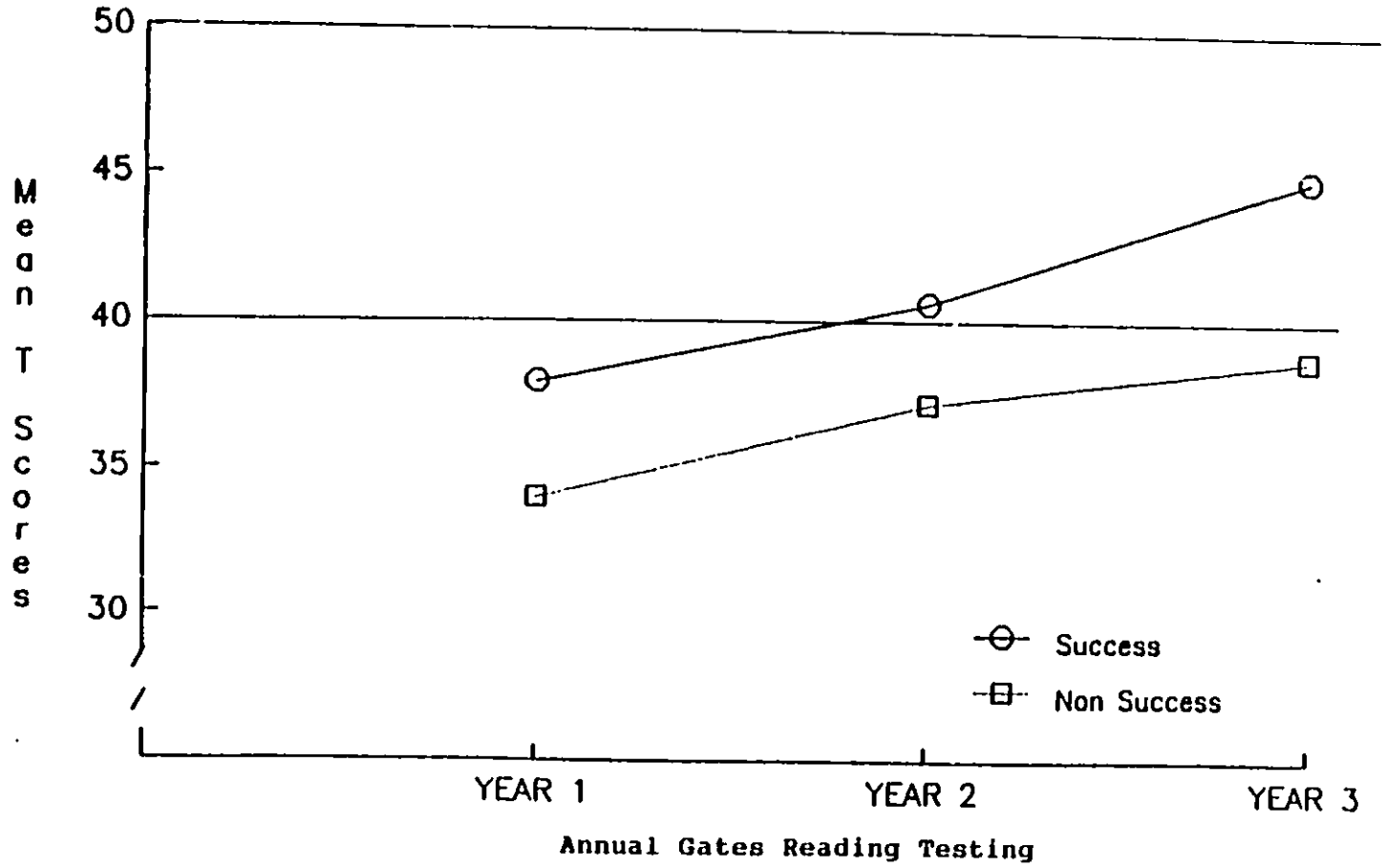

Figure 19. Reading progress over three years for successfully and unsuccessfully mainstreamed children of Group 3.

CHAPTER IV

DISCUSSION

Researchers have documented a variety of emotional/behavioral problems that differentiate learning-disabled from non learning-disabled children. Commonly observed among learning-disabled children are high frequencies of behaviors such as distractibility, dependency, overactivity, and poor task-orientation. These behavioral problems are often accompanied by significant emotional difficulties, including feelings of inadequacy and low self-worth.

Recent investigations, however, have demonstrated the heterogeneity of the school-age learning-disabled population, both in terms of ability/disability patterns and emotional/behavioral functioning. The initial findings of this research suggest that specific patterns of abilities and deficits are associated with identifiable patterns of emotional/behavioral adjustment. The vast majority of these studies, however, employed parent reports of the children's behavioral adjustment. The school related functioning of the homogeneous ability subtype groups, which may be gleaned from teacher reports, requires investigation. Few longitudinal investigations of the relationship between ability/disability patterns and emotional/behavioral concomitants have been initiated to date. There is a need also for empirical documentation

of long-term academic achievement outcomes for different subtypes of learning-disabled children.

The purpose of the present study was to determine whether learning-disabled children presenting differing patterns of abilities and deficits also differ in their emotional/behavioral functioning in school. The retrospective design of this study also facilitated an investigation of the relationship between specific ability/disability patterns and long-term academic achievement.

Separate analyses were conducted on teacher behavior rating scale data for a sample of learning-disabled children and for specific ability/disability pattern groups comprising the overall sample. Subsequent analyses compared the reading achievement progress and frequency of successful return from full-time special education classrooms to the academic mainstream for different ability structure subtypes.

In the following sections the findings pertaining to the emotional/behavioral functioning of the different ability profile groups initially will be discussed. The long-term reading progress and mainstreaming outcomes for each group then will be reviewed in the context of the expectations of this study. The relevance of these findings to the issue of the heterogeneity of the school-age learning-disabled population is addressed in some detail. The final section of this chapter outlines the limitations of this investigation and presents recommendations for future studies.

Ability Structure Subtypes of Learning-Disabled Children

The initial analyses support the conclusion that the learning-disabled population is heterogeneous with respect to ability structure. Such subtypes appear to be readily discernible through the use of indexes such as WISC-R VIQ-PIQ discrepancy patterns (Rourke, Young, & Flewelling, 1971; Rourke, 1988). For example, the present sample of learning-disabled children fell into three subgroups. The three groups did not differ in full-scale IQ or age at the time of their placement into special education classes. However, the groups differed in the relationship of their verbal and non verbal IQ scores.

One group exhibited virtually equal verbal and non verbal mean IQ scores. In contrast, the mean difference between VIQ and PIQ for the other two subtypes was almost 20 IQ points. An equal proportion of Group 1 (VIQ = PIQ), Group 2 (HP - LV), and Group 3 (HV - LP) children surfaced during the selection of the overall sample. This reflected the actual proportions found in learning-disability classrooms within the school system from which the sample was drawn.

Emotional/Behavioural Functioning of Ability Structure Subtypes

It was predicted, based on the results of previous research, that the majority of the children in the overall learning-disabled sample would present as relatively well adjusted. Only partial support for this hypothesis was found in the present study. Specifically, prior to being diagnosed as learning-disabled, the majority of the children sampled were rated by their regular classroom teachers as relatively poorly adjusted.

The results for pre-placement teacher ratings support a second prediction that classroom teachers would be most concerned regarding attentional problems and dependency among learning-disabled students. Regular classroom teachers' behavior ratings indicated high prevalence rates for problems related to distractibility (88%), self-confidence (65%), and emotional control (58%). The prevalence of specific behavior symptoms reported for this sample corresponds to that observed for other samples of emotionally disturbed and learning-disabled children. Grieger and Richards (1976) reported that approximately 80% of their sample of special education students exhibited attentional deficits, distractibility problems and lack of self-confidence.

In comparison, support for the hypothesis of generally adequate emotional adjustment for the overall sample was suggested by teacher ratings while the children were in special class programs. Special education teacher ratings indicated "normal" emotional/behavioral functioning for the overall sample for three consecutive years. The trend over the three years for all dimensions of emotional/behavioral functioning supports the observations of others (Porter & Rourke, 1985; Rourke, 1988) that: (a) most learning-disabled children do not experience serious emotional and social difficulties and (b) most do not become more prone to such difficulties over time.

An explanation of the rather significant shift in the reported functioning of the learning-disabled children prior to and following special class placement is required. A number of tentative explanations are possible. Perhaps the reduction of academic pressure and frustration following placement in the more protective special class setting was

accompanied by improved behavioral functioning of these children. Battle and Blower (1982) reported significant gains in self-esteem for special education students following two years in special classes. Earlier, Ribner (1978) reported that learning-disabled children in special education classes exhibited better self-images than learning-disabled children in regular class programs.

A second possibility is that observed differences between pre and post-placement behavior ratings reflect different expectations of regular and special education teachers regarding children's behavior. Evidence regarding the relationship between teacher perceptions and actual classroom behavior of learning-disabled and normal achieving children has not been definitive (see McKinney & Feagans, 1983). The absence of a normally achieving control group in the present study precluded verification of the "expectancy difference" hypothesis.

A third explanation for the differences between pre-placement and special class teacher ratings is that such variability was due to instrument and/or rater biases. The referring teacher rating scales proved to be poorly correlated with those WPBIC scales purportedly tapping similar dimensions of behavior (eg: concentration and distractibility; peer relationships; acting-out and emotional control scales). That the results reported for the WPBIC ratings correspond to those of previous research more consistently than do the pre-placement ratings may simply reflect differences in the psychometric qualities of the two scales.

Specifically, caution is advised in viewing the referring teacher

rating scale as a reliable and valid measure of student behaviour. This non-standardized instrument elicits a rating, along a five point continuum, on each dimension. The WPBIC, on the other hand, is a standardized instrument comprised of multiple items for each scale. The former measure is more likely to produce overestimates (or underestimates) of the prevalence of specific behaviours among the population studied due to its essentially "behavior present or absent" format. The WPBIC in contrast presents, in a standardized manner, a variety of behaviors which load on a specific behavioral dimension. A significant score on the WPBIC scales may be viewed with greater confidence to be reflective of specific adjustment problems for a specific student or group.

Furthermore, special education teachers were specifically instructed to observe their students for an extended period prior to completing the WPBIC. This may not have occurred with the regular class teachers. They were unaware that they would be required to complete the brief rating form prior to initiating the referral. The more extensive baseline observation period underlying the special education teachers' ratings may, consequently, translate into a more reliable measurement of the behavioral functioning of the children.

A further issue pertaining to rater bias must be addressed. A question that may be raised pertains to whether regular classroom teachers used the behavior scale as leverage to effect a special class placement for a student. If so, the prevalence/severity of reported behavioral problems among the children prior to placement would represent

an overestimation of the actual occurrence of such problems within the sample. The decline in behavioral problems observed following placement then might merely reflect the absence of a "placement striving motive" on the part of special education teachers.

While the leverage factor cannot be ruled out, a variety of observations are relevant to this issue. Specifically, the teachers were instructed to complete this scale to facilitate information gathering as part of a referral for an academic assessment only. The scale was not used by the teacher or school placement team to effect a special class placement of a student. Secondly, consistent with Ministry of Education guidelines, learning disability class placements were strongly discouraged for behaviorally disturbed children. Thus, it would have been counterproductive to achieving a special class placement for their student if the teacher emphasized the behavioral aspects in the referral. A separate rating and referral process was employed by teachers when they sought services for behaviorally troubled students. Consequently, the children included in this study represent a sample of students initially referred for nonbehaviorally based learning problems.

The significant shift toward better overall emotional/behavioral functioning following special class placement may then reflect a fourth factor. Possibly, the overall sample mean scale scores merely mask differences in adjustment among specific subgroups comprising the learning-disabled population (Rourke, 1985, 1988). Support for this position emerges from a review of the results pertaining to the emotional/behavioral adjustment of the three ability structure subtypes

comprising the present sample. A discussion of these results follows.

As predicted, the different ability structure subtypes present different patterns of emotional/behavioral functioning within the school setting. A very high percentage (60%-80% of the children in each group were rated by their teachers as highly distractible and lacking in self-confidence. However, even prior to being diagnosed as learning-disabled, a greater proportion of Group 1 (VIQ=PIQ) than Group 2 (HP-LV) or Group 3 (HV-LP) children were rated as exhibiting significant emotional/behavioral problems. It must be noted that these group differences, and those discussed in the following sections for the most part, reflect observed trends but statistically nonsignificant differences among the groups. Discussion of inter-group differences in emotional behavioral functioning must be interpreted within this context and conclusions drawn from these results considered with caution pending further study.

Following placement in the full-time special education classrooms, group differences in emotional/behavioral functioning continued to be evident. Group 1 children continued to present the greatest concern for teachers across a number of dimensions of emotional/behavioral adjustment. This ability structure group exhibited symptoms of global behavioral disturbance, as well as immaturity in personal and social adjustment. Even in the special education classroom they remain highly distractible and disruptive in their behavior.

After three years in the program Group 1 children continued to present the least well adjusted profile of the three ability groups.

Personal and social adjustment difficulties including acting-out behaviors in class, continued to characterize the problems of this group. The specific behaviors manifested by this group are remarkably similar to those of Porter and Rourke's (1985) overactive, distractible, "conduct disorder" learning-disabled subtype.

Group 3 children presented behavioral profiles that were similar to Group 1 children during their first year in special class. The major concerns of teachers for both groups involve distractibility, immaturity, and overall emotional/behavioral disturbance. The Group 3 children did not, however, present problems of disruptive behavior in class and interacted relatively more appropriately with others than did Group 1 children. The emotional/behavioral functioning of the Group 3 children parallels that observed by previous researchers that have studied HV - LP profile learning-disabled children (Fisk, Fuerst, and Rourke, 1988). Strang and Rourke (1985) also observed anxiety and dependency/immaturity problems in a sample of learning-disabled children exhibiting a similar pattern of "nonverbal learning disabilities".

In view of the single index employed to define ability pattern group membership (i.e. VIQ - PIQ discrepancy) in the present study, it would be presumptuous to propose that the Group 3 (HV-LP) pattern is synonymous with what Rourke defines as the nonverbal learning disabilities or NLD syndrome. Nevertheless, the presence of some striking similarities in processing abilities/deficits invites a comparison between Group 3 and NLD syndrome patterns. Despite significantly better developed verbal abilities, the Group 3 children lagged as far behind in reading compre-

hension levels, upon entering special class, as their psycholinguistically impaired Group 2 peers. Group 3 children also exhibited visual perceptual and spatial-organizational deficits similar to those manifested by NLD children.

Previous research with the NLD child has identified emotional/behavioral deficits including "hyperactivity" during early childhood. With advancing years some of these children become increasingly normoactive and eventually hypoactive, depressed and socially withdrawn (Rourke, 1987). Failure to anticipate the consequences of their actions as well as difficulty in problem solving in novel situations are two characteristic deficits of the NLD child. Both are considered to underlie the disinhibition, impulsivity and overactivity of the younger NLD child. In the NLD model it has been proposed that the reduction of activity level observed with these children during early to middle elementary school years is a consequence of the frequent negative feedback resulting from such socially maladaptive behavior. The chronic difficulties in adapting to novel interpersonal situations, it is proposed, lead to continued negative reactions from others with a concomitant shift toward reduced interaction with others and an increasingly hypoactive response style.

Consistent with this observation, the Group 3 children in the present study exhibited distractibility and concentration problems both prior to and following entry into special class. It was reported by their teachers that, as a group, these children did become normoactive during the second and third years of their special education program. Whether

this reflects an improvement towards normal behavioural adjustment or a transition, as per the NLD model, from hyperactivity to eventual hypoactivity and internalized emotional problems cannot be determined from the results. As will be discussed in a following section, at least for the small number of Group 3 children that failed to mainstream successfully, a trend toward internalized emotional difficulties was evident in the ratings while they remained in special class.

Longitudinal follow-up would be required prior to speculating further regarding (a) the behavioral change documented during the time period examined in this study and (b) the relationship between Group 3 and NLD syndrome problems, both academic and behavioral.

The Group 2 children in the present study, on the other hand, presented normal emotional/behavioral profiles over the three years in special education. This is noteworthy in view of the fact that these children experienced the most significant chronic academic problems of the three groups. Apparently, for this subtype, academic frustrations do not produce long-term concomitant emotional/behavioral problems. Virtually identical results have been observed in previous research for this subtype of learning-disabled child (Fisk, Fuerst, and Rourke, 1988). It should be noted that in the present study a significant percentage of Group 2 children exhibited emotional/behavioral problems prior to their placement in special class programs.

As Rourke (1988) recently observed for the Group 2 subtype, "something in addition to psycholinguistic deficiency" is required for disturbed emotional/behavioral functioning to occur. This may include

unrealistic parental/teacher expectations, motivational issues or teacher-pupil conflict. The behavioral concerns expressed by regular classroom teachers in this study for Group 2 children are consistent with such an interpretation. Prior to the referral and subsequent diagnosis of the learning deficits of this subtype, inappropriate demands for achievement would be common. This may have exacerbated the frustration experienced by Group 2 children, leading to the pattern of concentration and confidence problems reported by the referring teachers.

The consistent pattern of more appropriate emotional/behavioral adjustment following special class placement may simply reflect the reduction in frustration of both student and teacher. Altered expectancies in line with the now diagnosed learning difficulties of these children typify the special education program. This would facilitate increased self-confidence and a reduction of potential teacher-pupil conflict over issues such as persistence, sustained attention and task completion. In general, the protection/support of the special class environment may be most beneficial to the emotional/behavioral adjustment of children with the low verbal - high performance ability profile.

In summary, as predicted, over the three years of teacher ratings examined, Group 2 (HP - LV) children presented the most "normal" behavioral profiles of the three learning-disabled groups. A second prediction was only partially confirmed. Group 3 (HV - LP) children presented as somewhat more distractible and emotionally immature than Group 2 children following, but not prior to their placement into special

class. Contrary to expectation, the Group 1 behavioral profile suggests more serious adjustment problems than the other subtypes across all dimensions surveyed in this study.

There has been little previous investigation of the Group 1 ability structure subtype. Consequently, interpretation of the findings pertaining to this group must be considered tentative at best. Fisk, Fuerst, and Rourke (1988) found that only 35% of their VIQ = PIQ group of learning-disabled children fell within an "emotionally disturbed" or "hyperactive" category. They employed, however, a more rigorous screening method with their clinic referred sample to exclude learning-disabled children with suspected emotional disturbance. It is possible that in the present study some portion of the Group 1 sample was comprised of children with primary emotional difficulties underlying their learning problems. They may have been misdiagnosed as learning-disabled on the basis of an achievement - ability discrepancy criterion alone. On the other hand, they may represent a unique group of learning-disabled youngsters that is heterogeneous with respect to specific central processing and adaptive problems. An investigation of these factors was beyond the scope of the present study.

Finally, the consistencies noted between the findings of the present study and previous ability subtype research are encouraging since the previous studies: (a) employed clinic referred samples of learning-disabled children and (b) obtained behavioral profiles from parent ratings of their children.

Mainstreaming Success and Reading Achievement

It was predicted that Group 3 children would experience the most academic success of the three ability structure groups, due to their relative strengths in verbal processing abilities. The advantage for the Group 3 subtype was expected to manifest itself in the form of higher rates of reading progress and successful return to the academic mainstream. The results pertaining to the achievement outcomes for the three groups support both predictions.

Specifically, approximately three quarters of Group 3 children successfully returned to the regular academic stream following full-time special class assistance. In comparison, two thirds of Group 1 and over eighty percent of Group 2 children failed to return successfully to the mainstream during the same time period. The results pertaining to the reading progress of each group parallel the mainstreaming success group differences.

That is, (a) Group 3 reading achievement significantly exceeded that of the other two groups by the third year of special class assistance; (b) only the Group 3 children achieved a mean reading comprehension score within the average range after three years of special education; and (c) only in Group 3 did a majority of the children (i.e., 70%) achieve reading levels within the average range while in special class programs. As predicted, this subgroup also made the most steady gains in reading over the three years of special education.

The findings of the study also help clarify the relationship between early reading achievement and eventual return to the academic mainstream

for learning-disabled children. All of the relatively few Group 2 children who returned to regular class programs achieved average range reading levels by the second year of their special program. The majority of eventually successfully mainstreamed Group 3 children also achieved average range reading levels while in special class. A similar trend was noted for Group 1 successfully mainstreamed children. They achieved higher reading levels than unsuccessfully mainstreamed members by the third year of special programming.

In contrast to the findings for successfully mainstreamed children, unsuccessfully mainstreamed children of all three groups failed to achieve average reading ability levels after three years. The very small sample of successfully mainstreamed children in Groups 1 and 2 limits the confidence with which these findings may be generalized; these results, however, provide some initial direction for the task of mapping long-term achievement outcomes for learning-disabled children of differing ability/disability patterns.

Two issues pertaining to the achievement outcome findings must be addressed. The first issue involves the failure of some of the Group 3 children to achieve reading or mainstreaming success despite their strong verbal processing abilities. The second issue pertains to the poor academic progress of the majority of Group 1 children despite their essentially normal WISC-R profiles. Both issues are addressed in the following section, which reviews the emotional/behavioral functioning of successfully and unsuccessfully mainstreamed children for each ability structure group.

Mainstreaming Success and Emotional/Behavioral Adjustment

Knowledge of a child's emotional/behavioral functioning bore no relationship to the academic success of Group 2 children. Members of this subtype, whether eventually successfully or unsuccessfully mainstreamed, did not, as a group, present clinically significant emotional/behavioral problems while they were in special class programs.

The most consistent relationship between mainstreaming success and emotional/behavioral functioning emerged for Group 3 children. The majority of Group 3 children were eventually mainstreamed successfully and exhibited few behaviors of concern to teachers following special assistance.

In contrast, the few Group 3 members that failed to successfully return to regular academic programs were found to exhibit very significant emotional/behavioral problems. Distractibility, immaturity and overall emotional/behavioral disturbance characterized these children when they were placed in special classes. Their emotional immaturity was still in evidence to a significant degree after three years in the special education program.

As illustrated in Figure 15, unsuccessfully mainstreamed Group 3 children exhibited notably elevated WPBIC profiles relative to both (a) successfully mainstreamed Group 3 members and (b) the overall sample group at Year 3. For the small percentage of Group 3 children that experience long-term academic difficulties, significant emotional adjustment problems appear to be an important contributing factor.

The results also suggested that the dimension of internalized

emotional disorder may have some relationship to school achievement outcomes for the Group 3 ability structure subtype. It was predicted that Group 3 children would begin to exhibit signs of "internalized psychopathology" during early adolescence (see Rourke, 1988 for a cogent discussion of this issue). This was not observed in the results for the overall group or the successfully mainstreamed children of Group 3. However, for the small number of Group 3 children that failed to mainstream successfully there was a trend in the predicted direction.

Specifically, in contrast to the successfully mainstreamed children, academically unsuccessful Group 3 children continued to exhibit elevated Withdrawal and Immaturity scale profiles after three years. Examination of the items loading on these dimensions reveals that teachers perceived increasing problems for this subgroup such as: (a) avoidance of interaction with peers, (b) chronic listlessness and fatigue, (c) unprovoked weeping, nervous tics, reported nightmares and eneuresis, (d) somatic complaints and (e) expressed fears of something terrible happening to him. This pattern of behaviors suggests that an internalized emotional reaction to stress may be associated with continued academic difficulties for some Group 3 learning-disabled children.

The relationship between emotional/behavioral functioning and achievement outcome for Group 1 children is somewhat more difficult to interpret. Successfully and unsuccessfully mainstreamed Group 1 children presented no readily identifiable differentiating patterns of emotional/behavioral adjustment. While unsuccessful mainstreaming was associated with more acting-out problems in class, both SM and UM sub-

groups exhibited severe distractibility problems. Furthermore, during their third year of special education, successfully mainstreamed Group 1 children were perceived by their teachers as more immature and socially inadequate than their unsuccessfully mainstreamed peers.

As previously suggested in this chapter, this group appears to be comprised of children whose learning difficulties may be a consequence of significant emotional maladjustment. They present, as a group, the most significant behavioral concerns to their teachers. These problems were evident for Group 1 children both prior to and following their admission to special class programs. Their behavior was described as both distractible and distracting to others. Even during first grade, their academic difficulties related to task-orientation deficits and chronic conflict with teacher expectancies regarding appropriate classroom behavior.

It would be informative to investigate the pre-school adjustment of this group of children. Perhaps, the direction of causality between the emotional and academic functioning of this group of children may be determined through such efforts. The issue of causality between emotional/behavioral difficulties and achievement problems of learning-disabled children remains a topic of much debate within the field at large (Bender, 1987; McKinney & Feagans, 1984; Pullis, 1985). Consistent with the present study's findings, research has demonstrated a relationship between accompanying adjustment and academic achievement problems.

McKinney and Speece (1986) recently documented chronic reading

deficits for a sample of learning-disabled children that also exhibited "attention deficit" or conduct problems. This group made significantly fewer gains in reading achievement than a learning-disabled no behavior problem group during three years of remedial assistance in reading. The results of the present investigation suggest that the relationship between emotional/benavioral problems and achievement differs for learning-disabled children exhibiting different patterns of cognitive abilities and deficits.

Limitations of this Study and Suggestions for Future Research

The results of this study reinforce the need to further elaborate the nature of the heterogeneity within the population of learning-disabled children. Some identifiable trends pertaining to both ability/disability patterns, emotional/behavioral functioning and academic outcomes for subtypes of learning-disabled children surfaced in this study. Specific limitations regarding the sample of children studied and the measurement techniques employed limit the generalizability of the results to the overall learning-disabled population. Some of these limitations and suggestions pertaining to future research efforts are outlined in the following section.

The learning-disabled children comprising the study sample were drawn from a population of teacher identified full-time special education students. Consequently, they may not represent the population of learning-disabled children in general. The accuracy of teacher judgments regarding students' exceptionalities is still a matter of debate (Gresham, Reschley, & Carey, 1987; McKinney & Feagans, 1983). Neverthe-

less, future studies may improve upon the generalizability of the findings by including samples of (a) learning-disabled children whose diagnoses have been confirmed by comprehensive neuropsychological assessments; (b) children in part-time learning-disability programs, and (c) children diagnosed as learning-disabled by an I.P.R.C. but not placed in special education programs.

The "ability structure subtypes" compared in this study were differentiated on the basis of a single index (WISC-R VIQ - PIQ discrepancy). This approach has been verified in previous research efforts with learning-disabled children. However, conclusions regarding the specific central processing abilities/deficits of each subgroup would be somewhat premature at this point. It would be informative to confirm the subtyping decision process by combining the V - P discrepancy index with other indices (e.g., W.R.A.T. achievement patterns; arithmetic and spelling disorder patterns, etc; see Rourke, 1985 for a detailed discussion of different techniques).

A further limitation of this study was the number of subjects comprising the ability subtype groups as well as the mainstreaming success subgroups. The small percentage of SM children in Groups 1 and 2 and UM children in Group 3 limits the conclusions relative to these subtypes. The trends observed in the results of this study should be explored with a larger sample of SM and UM children for each ability subtype. A larger sample would facilitate the use of more exhaustive multivariate statistical procedures such as discriminant analysis. Such analyses would help delineate the nature of the relationship among

specific predictor variables for each subtype, with respect to emotional/behavioral functioning and future achievement.

A final sample selection limitation involved the significantly higher mean verbal IQ scores of the Group 3 children relative to those of Groups 1 and 2. One question not addressed in this study warrants examination. Specifically, which contributes most to achievement outcomes for learning-disabled children - simple level of verbal ability or relative verbal-nonverbal ability levels? Comparison tests did indicate that level of verbal I.Q. did not differentiate among successfully and unsuccessfully mainstreamed children across the sample or within subtypes. Nevertheless, a future study employing groups with equivalent verbal IQs, differing only in performance IQ, would be informative.

Two problems related to the measurement instruments employed in this study must be addressed in future endeavours. Due to the retrospective design of this study, it was not possible to control the teacher rating scales that had been used to assess the children's adjustment. Two different rating scales, one standardized and one not, were used by teachers prior to and following the placement of students into special class programs. Consequently, analyses with respect to pre- and post-placement emotional/behavioral adjustment of the children were limited to qualitative comparisons. In future studies, trend analyses may be facilitated by ensuring that comparative pre- and post-placement measures of emotional/behavioral adjustment are available for the sample. Careful selection of measures would also facilitate much needed longitudinal mapping of changes in emotional/behavioral adjustment, even

into adulthood, for samples of learning-disabled children.

The present study examined teacher ratings of the emotional/behavioral adjustment of children while previous subtyping research almost exclusively employed parent rating measures (e.g., PIC-R). While the results of this study represents a cross-validation of previous subtyping research, the use of different instruments restricts other important comparisons. For example, the teacher scales employed sample a much narrower band of emotional/behavioral functioning than parent inventories such as the PIC-R. The teacher rating measures are also less clinically sensitive instruments. Consequently, some of the between group differences in emotional/behavioral functioning for the sample may have been masked in the present study. In particular, the predicted emergence of internalized psychopathology for Group 3 children by adolescence may have been further elucidated by more comprehensive measures.

It would be productive to employ composite measures of emotional/behavioral functioning (i.e., combining parent and teacher rating scales) in future studies. Rushton, Brainerd, & Pressley (1983) have emphasized the importance of "the principle of aggregation" (Cronbach, 1957) in longitudinal research to maximize construct and criterion validity. Teachers and parents most likely view different aspects of the child's emotional/behavioral adjustment. A combination of measures of their perceptions would expedite more accurate assessment of the general functioning of these children in future studies.

A final problem pertaining to the retrospective approach employed in

this study involves the loss of important information for specific subgroups of children. For Group 3 children in particular, a significant percentage left special education programs after three years. Subsequent behavioral and reading progress data was not available for the majority of this group, as well as some children of the other two groups. Meaningful comparisons of changes in adjustment and reading progress among groups were thus limited to three years in the present study. The initiation of longitudinal investigations is recommended to verify the trends observed in the present study over long periods of development for learning-disabled children.

In conclusion, the present study represented an initial effort to map longitudinal changes in the emotional/behavioral functioning of learning-disabled children. Comparison of the results for the overall learning-disabled sample with that of specific ability structure subgroups highlights the need for continued subtypal analyses regarding: (a) central processing abilities/disabilities and (b) emotional/behavioral functioning of learning-disabled children. Further longitudinal research to identify emotional/behavioral antecedents of later achievement and adjustment problems for the heterogeneous learning-disabled population is warranted.

The present study also differed from the majority of studies reviewed by documenting achievement outcomes for learning-disability subtypes from first grade through the end of elementary school. Researchers typically have conducted cross-sectional comparisons between learning-disabled and non-learning disabled children or between older and

younger learning-disabled children. Few studies have employed samples of learning-disabled children as young as those of the present investigation. This study provides some insight into the early emergence of identifiable ability structure patterns among learning-disabled children. It should be noted that these V-P discrepancy patterns were observed in the intelligence test profiles of 6 and 7 year old children. Changes over time in (a) the level of V-P discrepancies (as predicted by a regression to the mean hypothesis) and (b) the relationship between such changes and academic outcomes for subgroup members were not examined in this study. A reassessment of the sample with the WISC-R to examine these issues would represent a logical extension of the present research.

Equally few studies of the emotional/behavioral functioning of learning-disability subtypes have employed regular and special class teacher ratings of students' adjustment. Most have utilized parent rating scales, especially the PIC-R. The consistency in the results of the present study and those employing parent ratings serves to substantiate the validity of subtype-specific patterns of emotional/behavioral adjustment.

On a theoretical level, the results support the position of others that challenge the exclusionary definition of learning-disabilities (Algozzine & Ysseldyke, 1986; Deci & Chandler, 1986). The addition of social and emotional factors to the existing defining criteria for a diagnosis of learning-disability appears warranted. On a practical level the results reinforce the need to include (a) analyses of the specific patterns of abilities deficits and (b) measures of emotional/behavioral

adjustment, in the process of identifying and planning intervention strategies for learning-disabled children. Finally, for two of the sub-types identified in the present study, remedial/intervention programs also must address the emotional/behavioral adjustment problems of these children. The finding that these maladaptive patterns of functioning are present during the first years in school for these children reinforces the need for very early identification and intervention.

APPENDIX A

DEFINITION OF LEARNING DISABILITY

Definition

A learning disorder evident in both academic and social situations that involves one or more of the processes necessary for the proper use of spoken language or the symbols of communication, and that is characterized by a condition that:

(a) is not primarily the result of

(i) impairment of vision;

(ii) impairment of hearing;

(iii) physical handicap;

(iv) mental retardation;

(v) primary emotional disturbance;

or

(vi) cultural difference; and

(b) results in a significant discrepancy between academic achievement and assessed intellectual ability, with defects in one or more of:

(i) receptive language (i.e., listening, reading);

(ii) language processing (i.e., thinking, conceptualizing, integrating);

(iii) expressive language (i.e., talking, spelling, writing);

(iv) mathematical computations; and

(c) may be associated with one or more conditions diagnosed as:

(i) a perceptual handicap;
(ii) a brain injury;
(iii) minimal brain dysfunction;
(iv) dyslexia; or
(v) developmental aphasia.

APPENDIX B

REFERRING TEACHER BEHAVIOR RATING SCALE

The following is a behavior rating scale. Each item indicates the end points of a behavioural continuum. The description on the left for each item defines a type of behaviour which creates a problem for either himself or others. The description on the right defines behaviours which are considered strengths. A low rating (1 & 2) is to be recorded when the rater perceives the student's behaviour as being similar to the description on the left; high ratings (4 & 5) are recorded if the student's behaviour is similar to the description on the right. Record a 3 when the behaviour is not a problem but neither is it a strength.
When two extremes are described for the left side of an item please circle the one relevant to the rating: e.g. over-confident, under-confident.

II. Relationship with Students

	1	2	3	4	5	
1.	quarrelsome				peaceful	
2.	selfish				sharing	
3.	suspicious				trusting	
4.	rejecting				accepting	
5.	manipulative				straight forward	
6.	passive OR domineering				cooperative independence	

III. Personal Adjustment

	1	2	3	4	5	
1.	unhappy				cheerful	
2.	overactive OR withdrawn				balanced activity	
3.	apathetic				good initiative	
4.	over-confident OR under-confident				realistic confidence	
5.	anxious				calm	
6.	lack of concentration				concentrates well	
7.	lack of temper control				good temper control	
8.	under-emotional OR over-emotional				appropriate emotional control	

Items comprising each dimension: Peer Relations-composite score of items 1-6 of Section II; Activity Level-item 2 Section III; Self-Confidence- item 4 Section III; Concentration- item 6 Section III; Emotional Control-item 8 Section III.

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